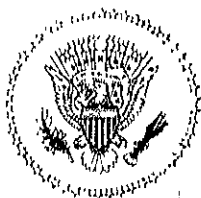


THE STATE OF SMALL BUSINESS:



A REPORT OF THE PRESIDENT

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Small Business and Competition
of the U.S. Small Business Administration

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THE

STATE

OF

SMALL

BUSINESS

A REPORT

OF THE

PRESIDENT

1984 State of Small Business:

A Report of the President

To the Congress of
the United States

I am pleased to submit to the Congress my fourth annual report on the state of small business.

Nineteen eighty-four was a year of continued strong economic growth for the U.S. economy and for small business. This success was achieved through the efforts of thousands of men and women who own, operate, and work in this Nation's small businesses. New businesses, new industries, and new jobs have been produced by millions of entrepreneurs free to test new ideas in open markets. This growing and dynamic small business role must be continued if we are to maintain our national strength in the world economy.

Actions that promote a vigorous small business sector have been and will continue to be at the heart of this Administration's economic plans. Low inflation, reduced and more equitable taxes, fewer regulatory burdens, and a sound monetary policy are the underpinnings of our current growth and will continue to be my primary tools for promoting small business success.

We have concluded that the lending programs of the Small Business Administration are unnecessary for the thriving small business sector. This decision will not diminish the voice of small business within the Executive branch. We will ensure that small business interests are represented in the development of government policies and programs, through non-lending approaches including advocacy, procurement assistance, various small business and minority set-aside programs, and technical assistance and aid to minority firms.

In my three prior messages to the Congress, I have outlined specific small business policies and goals for this Administration and the Congress. These reports document the success of these policies measured by the extraordinary contribution that small firms made to our economy through a difficult recession and on a very strong recovery. In 1984, we made important progress toward these goals, building on the tax and regulatory reforms of our first three years.

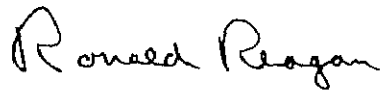
In 1985, the opportunity for small business growth will continue, especially if we in the Government reaffirm our intentions to let small business grow without distrac-

tion or interference by the Government. Our stable economy will depend on more disciplined spending by the Federal Government and the rejection of any calls for new taxes.

Congressional action on tax reform, however, is very much in order. Our efforts to lower the tax burden on small businesses are not complete as long as the tax code is so cumbersome and complicated. Businesses must be allowed to develop based on opportunities in the marketplace, not on their ability to weave around the various tax technicalities that have developed over the years. Our goal is a simplified tax system with the lowest possible burden for the individual and small business. Our goal in this reform is not to balance the concerns of various special interests, but to achieve a fairer and simpler tax system for all taxpayers, including our 14 million small businesses.

Our small business agenda for 1985 is broad. In addition to spending and tax reform, many other Federal policies affect the climate for small business growth. I urge the Congress to act on my proposal for urban enterprise zones, which would provide tax incentives for job creation in distressed areas. Uniform laws governing liability for product defects are important to untangling the current maze of conflicting State rules. Control of health care costs is important to us all, and especially important to small business owners who employ half the Nation's work force.

Of course, many other actions by Federal officials affect small firms. I will continue to direct efforts by all departments and agencies to ensure that the spirit of entrepreneurs and small business growth will continue, unhindered by the Government.

A handwritten signature in dark ink, reading "Ronald Reagan". The signature is written in a cursive, flowing style with a large initial "R".

The White House
March 1985

THE ANNUAL

REPORT ON

SMALL

BUSINESS

AND COMPETITION

THE

U.S. SMALL BUSINESS

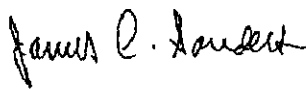
ADMINISTRATION

Letter of Transmittal

Mr. President

The United States Small Business Administration herewith submits its 1985 Report on Small Business and Competition in accordance with the provisions of the Small Business Economic Policy Act of 1980. The Report was prepared by the Office of Advocacy of the Small Business Administration, with the assistance of the Council of Economic Advisers.

Sincerely,



JAMES C. SANDERS
Administrator



FRANK S. SWAIN
*Chief Counsel for
Advocacy*

U.S. Small Business Administration
Washington, D.C.
March 1, 1985

Executive Summary

Growth was the key word for the U.S. economy and for small business in 1984, as American businesses followed the normal patterns of a recovery. Small firms in particular continued to expand and adjust operations in a dynamic process that underlies a healthy market economy. As a major contributor to that growth, small businesses again led the way in productivity and job creation.

During the first half of the year, real gross national product (GNP) grew at an average rate of 8.6 percent, faster than the average for other recoveries. Industrial production and the unemployment level also improved more rapidly when compared to previous recovery periods. About 6.5 million new nonfarm jobs were created between November 1982 and October 1984. Corporate profits continued to rise in both large and small firms. Growth slowed during the third quarter, reducing inflationary pressure on the economy and pushing the average GNP growth rate up to 6 percent for the first three quarters.

The dynamic small business sector showed an extraordinary capacity to mobilize resources and generate new growth in the changing economy. Small business-dominated industries added jobs at a rate almost twice that of industries dominated by large firms: 11.4 percent compared to only 5.3 percent from November 1982 through October 1984.

Entrepreneurs incorporated approximately 325,000 new businesses in the first half of the year, an increase of 8.6 percent; startups, another measure of business growth, increased 7 percent. Small business failure and bankruptcy rates remained relatively constant, reflecting high rates of business formation in earlier periods. Bankruptcies were down and failures were up less than 1 percent for the first six months of 1984 compared to the same period in 1983.

Demand for new products or services generated small business growth, particularly in the services sector. Small business-dominated service firms registered a 12.6-percent increase in employment. Computer and data pro-

... increased 7 percent in the first half of the year, and certain retail industries dominated by small firms also expanded. Radio, television, and miscellaneous stores, for example, expanded sales by more than 20 percent; retail bakeries increased sales 14 percent. Small residential construction businesses performed well, and special trade contractors, providing plumbing, painting, masonry and roofing services did exceptionally well, growing as much as 20 percent over 1983.

Historically, small businesses have responded quickly to structural change. Drawing upon their capacity for entrepreneurship, innovation, and job creation, small firms have weathered the uncertainty of recessions and recoveries. Despite this strong record of new business and employment opportunities, a national debate has arisen on how best to deal with the issue of competitiveness and structural change.

Some policymakers contend that U.S. manufacturing industries are experiencing an inevitable decline that can be halted only through direct government intervention in the marketplace. Opponents of such an industrial policy argue that the U.S. economy is experiencing an industrial shift in focus rather than an absolute decline in production. American manufacturing industries are still expanding production, capital stock, and jobs in absolute terms; only the relative share of jobs in manufacturing has declined, as other parts of the economy have expanded.

After World War II, Japan and much of Western Europe adopted strong national industrial policies. Despite government-backed development plans, new job growth in Western European nations has been unimpressive when matched against the American record. During the last ten years, for example, the United States created approximately 20 million new jobs, Western Europe lost 2 million jobs during the same period. This lackluster performance is partially attributable to European policies that tampered with the natural forces of the marketplace, often shunting valuable resources away from the innovative and job-creating small business sector.

American small firms are now creating more than their share of new jobs through innovation and entrepreneurship, two traits characteristic of the American system but traditionally absent from European economies. Adopting a national industrial policy is the last strategy this Nation needs. Continued reliance on the proven innovativeness

and adaptability of small businesses seems a far better way to remain competitive in world markets.

Beginning in the 1970s, a growing national awareness questioned the U.S. Government's involvement in the marketplace. Government regulation of certain markets can inhibit competition and create overcapacity and increased costs in goods and services purchased by consumers and small businesses.

Small business and the economy as a whole have benefited from the deregulation of specific industries. New businesses and jobs have been created in many formerly regulated industries, especially in transportation, trucking, and financial services. The rise of new businesses is the direct result of an increasingly cost-conscious environment made more competitive by less restrictive federal controls. Many cost-saving innovations have lowered the price of products and services, allowing small firms to compete more effectively with larger companies. As the Federal Government's role in the marketplace diminishes, the small business sector will be able to take advantage of the many growth opportunities to create new jobs and more efficiently provide goods and services.

Deregulation also has increased small business' flexibility. For example, small firms now find it cheaper than before deregulation to ship goods and to travel on business. Small business owners are benefiting from more advantageous deposit and loan rates, giving them a broader range of financing alternatives. On balance, the deregulatory process has had a positive effect on small business and the rest of the economy.

Financing needs vary according to business cycles. During a slow economy, a small business retail operation may borrow because of surplus inventory or sluggish cash flow. During a recovery, on the other hand, the same retailer may have to borrow to expand inventory and to acquire new equipment. A small business may obtain its credit funds from a variety of sources. Financing for mom-and-pop stores, for example, comes mostly from informal sources—personal savings, friends, and relatives. By contrast, larger firms obtain their capital both from informal sources and commercial lenders. Among the many ways small businesses raise capital, banks remain the primary supplier of loans.

Demand for funds was strong in almost all sectors of the U.S. economy in 1984. Total borrowing increased 30 percent from 1982 to 1983—an annual rate of \$526 billion per year. American consumers borrowed heavily

in 1983 and 1984, mostly for household purchases like furniture and electrical appliances. Despite the competition for funds during this time of accelerated recovery and increased demand for credit, most small businesses still had access to capital markets.

Public attention to equity funds as a form of investment in young and fast-growing firms increased, especially between 1982 and 1984. As new firms continue to enter the mainstream economy, equity capital as a source of financing—particularly for high-technology industries—will continue to be as important.

Human capital is another important resource for small businesses. To continue growing, small firms must hire competent and motivated workers; offering competitive employee benefit packages is one way to attain that goal. The Nation's voluntary benefit system offers American wage-and-salary earners a wide variety of health and pension benefits: self-insured health plans, Individual Retirement Accounts, and Keogh plans. These options are available to employees of large and small businesses alike. However, small firms still face a difficult challenge when attempting to match large businesses benefit-for-benefit. For example, the cost for a company benefit plan is relatively fixed: it takes just as long to set up a plan for 5 as for 50 employees. On average, it costs a small business about \$1,180 per worker to establish a benefits package; a large firm pays only \$574 for the same package.

Profitability is the principal determinant of whether a business—large or small—can afford to provide its workers a benefit package. It is difficult for start-up and expanding small companies to offer a full complement of worker benefits. Yet these same enterprises furnish the Nation with the major share of new jobs. Neither business owners nor their employees are willing to pay for benefits if the business itself is unprofitable. Tax incentives for business-related benefits are irrelevant if a firm fails to generate sufficient cash flow or taxable profits, which is often the case with many small or start-up businesses.

Congress has passed a wide array of legislation supporting pension benefits for the wage-and-salary worker. Employees with company-paid plans and self-employed workers are now eligible for IRAs. Small firms, however, are still not taking full advantage of available options. Many jobholders, for example, are enrolling in IRAs more because of tax benefits than for retirement reasons. The expected Congressional debate over fringe benefit

limitations will inevitably affect small firms and the type of benefits they can offer.

Long-term structural changes are altering the composition of the small business work force. U.S. workers are moving out of traditional manufacturing jobs and into the expanding service industries. As a result, small firms are creating thousands of new jobs. Many of these new firms are owned by women, who are entering the ranks of business as never before.

In 1984, there were 3.1 million women business owners. The number of female sole proprietors increased 46 percent in the five-year period ending in 1982; women's share of sole proprietorships increased from 23 percent in 1977 to 26 percent in 1982. Undoubtedly, women entrepreneurs are the fastest growing segment of the Nation's small business population.

There are several reasons for this dramatic growth. Because of wider opportunities for female wage-and-salary earners over the past several years, women have gained valuable work experience that is directly transferable to entrepreneurial skills. While employed in traditional occupations, women acquired the necessary experience for running all types of ventures, from retail stores to real estate companies. In blue collar occupations women also have made significant inroads in more male-dominated industries like construction, welding, and telephone repair.

Higher education is another entry to the business world for women. Always a path to upgrading personal potential, educational advancement has served as a direct avenue for women desiring to start their own businesses. More women are focusing on higher education in nontraditional fields—such as aerospace, engineering, and electronics. The narrowing income gap between men and women should continue to narrow, as more women start businesses in those nontraditional professions and occupations.

Another explanation for the rapid growth in women-owned enterprises is the increasingly influential role of all small businesses. The shift from manufacturing to service-oriented industries has promoted an entrepreneurial economy in which small firms have taken the leadership. Clearly, women starting their own businesses are in an ideal position to contribute to this national trend.

Small, minority-owned businesses also are showing a growing ability to take advantage of expanding business opportunities in the marketplace and have made modest gains in recent years. The percentage of minority self-

employed has increased in relationship to wage-and-salary jobs, although to a lesser degree when compared with the majority work force. Minority-owned firms engaged in nontraditional businesses are as profitable as their nonminority counterparts.

One market offering greater opportunities for small businesses is federal procurement. For more than two centuries, the U.S. Government has been purchasing goods and services. Only since the beginning of World War II has it established programs to assist small businesses to compete more equitably with larger corporations in the procurement process. These programs are aimed at all segments of small business: veterans, women, and economically and socially disadvantaged small business owners.

In Fiscal Year 1983, the U.S. Government purchased \$170 billion in goods and services, 29 percent of which went to small firm contractors and subcontractors. Over the years, small firms have been most successful in competing for the small contracts, winning about 45 percent of awards under \$10,000. By contrast, 75 percent of all awards over that amount went to large businesses; small firms won only 14 percent.

The minority-owned firm share of government procurement has grown since 1982 when the Government directed all federal agencies to increase their minority contracting goals. By late 1983, the dollar value of minority prime and subcontract actions had increased by 10 percent.

Closely tied to the federal procurement effort is the Small Business Innovation Research (SBIR) program, which provides federal incentives to small, innovative firms and has stimulated high quality research, which is making a major contribution to the Nation's technology. In FY 1984 more than \$110 million in SBIR awards were made, with almost \$200 million scheduled for FY 1985.

To track the performance of new and existing industries, the Office of Advocacy of the U.S. Small Business Administration (SBA) has been developing a data base on American small businesses. The Small Business Data Base (SBDB) allows researchers to examine the growth and development of the small business sector in the U.S. economy since 1976. By using this unique source, researchers and policy planners can analyze firms with employees for all industries by geographic area over a specific period of time. Detailed information is also available on industry growth within states.

A new microdata file was recently completed to examine patterns of small business job creation and business establishment growth. The SBDB is increasingly being used by policymakers at the SBA and other federal agencies to analyze the impact of government decisions on small businesses.

Conclusion

In 1984, small businesses again demonstrated their ability to meet the challenges of a changing economy. As the recovery continued, small firms were more resilient and adaptable, creating new jobs and providing market innovations for the rest of the American economy. Buoyed by the tide of newly forming small businesses, women-owned ventures have become the fastest growing segment of the U.S. small business population.

The utility of a government-supported industrial policy should be considered irrelevant in the face of a strong national recovery led by small firms. Less government involvement resulting from deregulation has created a more cost-conscious environment in many industries that has benefited both businesses and consumers.

Dramatic shifts within the American economic system are testing virtually every part of American society. Small businesses—more than any other sector of the economy—have demonstrated their adaptive and regenerative capacity while continuing to make valuable contributions to a changing, healthy economy.

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Acknowledgments

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The State of Small Business

Synopsis

The key word for the American economy in 1984 was growth, in terms of both employment and national output. Small business shared in this growth, and led the way in many industries. Employment in small business-dominated industries expanded by 11.4 percent from October 1982 through October 1984. Employment in large business-dominated industries grew by only 5.3 percent during the same period. Proprietorship earnings, a measure of small business income, rose significantly during the first half of 1984.

During the course of the year, two small business-dominated industries, retail trade and residential construction, continued the strong growth which began in 1983. The strength of sales in these two business sectors helped maintain the rapid growth of the economy during the first six months of 1984. The service industries, another sector with a major small business presence, also continued to grow during both 1983 and 1984.

New businesses increased steadily in 1984, whether measured by actual business starts or by new incorporations. The upward trend in starts clearly reflected the growth trend of GNP and positive expectations about growth possibilities in the American economy. While business failures and bankruptcies might have been expected to fall significantly in 1984, given the strength of the overall economy, the failure and bankruptcy rates remained constant, heavily influenced by business startups in earlier periods.

Small business' traditional role as the major job generator in the American economy was confirmed by new analyses carried out with the Small Business Data Base. Comparisons made for various periods between 1976 and 1982 confirm that small businesses respond quickly to market opportunities and create more than their proportionate share of new jobs as part of that response.

The American economy is significantly more dynamic than most observers have perceived. Traditional statistical analysis focuses on net changes in the number of establishments and the number of jobs generated by American businesses. Dynamic analysis, using the full capabilities of the Small Business Data Base, indicates that American businesses, particularly small businesses, are born, grow, contract and die at a high rate. Thus, it is normal for an American business to change constantly in response to changing relative demands in the marketplace.

Introduction

Nineteen eighty-four was another good year for small business and the American economy. The rapid growth in the first half of the year tested the ability of many American businesses to keep pace with increasing market demands. Small businesses adjusted well to changes in the marketplace, as employment in small business-dominated industries expanded 11.4 percent from October 1982 through October 1984. In contrast, employment in large business-dominated industries grew only 5.3 percent.

Other aspects of small business performance also showed continued improvement in 1984. Business start-ups increased 7 percent during the first six months, as new incorporations increased 8.6 percent for the same months. Small business income, as measured by sole proprietorship and partnership income, increased 17.2 percent during 1984. Corporate profits, including the profits of small corporations, rose an even larger amount, 26.4 percent.

Increases in small business employment and income, and in new business starts, paralleled overall economic growth during the first half of 1984. Inflation grew, however, only 4.2 percent for the twelve months ending in June 1984. Interest rates, which moved up briefly during the first part of the year, began to move downward in May. Rapid growth during the first half of the year, averaging 8.6 percent in real gross national product (GNP), declined significantly in the third quarter as real GNP growth fell to 1.9 percent. Many economists welcomed this downward movement, believing that the economy would be unable to sustain the high growth rates of the early part of the year without generating severe inflationary pressures in the economy. Small business failure rates, relatively constant during the first six months of the year, appeared to increase in the third quarter in response to the business slowdown.

Growth and Change in the Economy in 1984

The American economy in 1984 was marked by significant expansion. The course of the expansion was uneven, with vigorous growth in the first quarter and higher-than-expected growth in the second quarter. The economy appeared to slow considerably in the third quarter, but GNP growth averaged slightly more than 6 percent for the first three quarters of the year. Small businesses clearly shared in the growth in the economy, leading the way in the retail sales, residential construction, and service industries.

Table 1.1 *Descriptive Statistics for the Current and Preceding Five Recoveries¹*

Trough	Percent Change After Six Quarters of Recovery				
	Real GNP	Industrial Production	Retail Sales	Housing Starts	Unemployment Rate
November 1982	10.8	20.6	14.9	49.4	-29.6
May 1954	10.1	18.1	NA	0.3	-29.3
April 1958	8.7	16.0	7.8	22.1	-28.5
February 1961	9.2	15.0	8.0	15.3	-18.6
November 1970	8.6	11.7	13.0	31.3	-1.1
March 1975	8.0	16.2	9.3	59.4	-8.4
Average for the Five Recoveries	8.8	15.0	9.5 ²	24.0	-17.1

¹The 1949 recovery was excluded because it was distorted by the Korean War, the 1980 recovery was excluded because it lasted only 12 months.

²Average of four recoveries.

Note: NA = Not Available

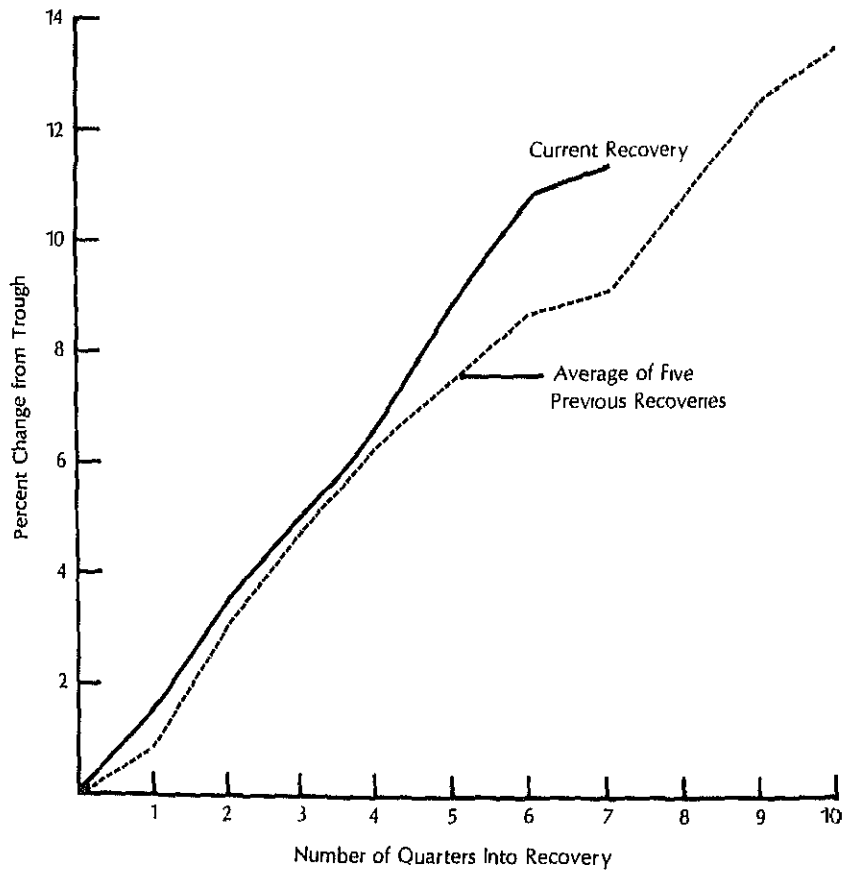
Sources: Gross National Product: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, various issues; Table 1.2: Industrial Production: Board of Governors of the Federal Reserve System, Statistical Release G-12.3, various issues; Retail Sales and Housing Starts: U.S. Department of Commerce, Bureau of the Census, Current Business Reports, "Monthly Retail Trade," various issues, and Construction Report C-20, "Housing Starts," various issues; Unemployment Rate: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, various issues.

Small business' strong performance can best be understood by comparing the overall strength of the present recovery with upturns following earlier recessions (Table 1.1 and Chart 1.1). During the first four quarters of the 1983 recovery, growth in real GNP closely paralleled average growth rates for earlier recovery periods. Beginning in the first quarter of 1984, however, GNP growth accelerated above the trend line of earlier recoveries, as rapid growth continued through the second quarter of 1984. The average growth rate of 8.6 percent during these first two quarters could not be sustained, and dropped to 1.9 percent by the third quarter. Many economists expressed relief that the growth rate of real GNP declined slightly in the third quarter, as continued expansion at the pace of the first half of the year would have led to severe strains on the economy.

Comparison of Recoveries

The strength of the expansion during the first six months of 1984 can best be seen by comparing changes in five key economic variables, after six quarters of recovery, with the average performance of the same variables in five earlier recessions (Table 1.1). Growth in real GNP

Chart 1.1 *Post Recession Performance Comparison of Real GNP, Fourth Quarter 1982–Third Quarter 1984 (Percent Change from Trough in Fourth Quarter 1982)*



Source U S Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, various issues

during the recovery of 1983 and the expansion of 1984 exceeded the average growth of GNP at the same point in five earlier recovery periods.

The strong performance in retail sales and housing starts was good news for small business. Retail sales expanded 14.9 percent during the first six quarters following the recession trough in the last quarter of 1982, compared with an average gain of 9.5 percent in retail sales at the same point in four previous recoveries. Small retailers with fewer than eleven outlets produced a major share of increased sales.

Housing starts were up 49.4 percent during the six quarters of the current recovery and expansion compared to a 24-percent average increase for the five earlier recoveries. Only the 1925 upswing showed a stronger housing gain. Small businesses play a strong role in the residential housing market. After several years of slow growth in housing, the rapid expansion in 1983 and in the first half of 1984 was possible because of resilient small builders that produce most of the single-family and small multi-family residential housing.

Industrial production and the unemployment level, both indicators of the Nation's economic health, improved more in 1983 and 1984 than in any of the earlier recovery periods. From a small business standpoint, these indicators point to the general demand level facing many components of small business. Increased industrial production, for example, is closely linked with increased activity throughout the wholesale and retail distribution chains, both of which are heavily populated by small businesses. Increased industrial production also implies more business for small trucking and freight forwarding firms and for small manufacturing firms, which support the automobile and other major manufacturing industries.

GNP in 1983 and 1984

The 1983 recovery was led by increased consumer spending, particularly for consumer durables, and by increased expenditures on new residential housing. Spending by businesses for new plant and equipment additions and more inventory supported the recovery through the first nine months of 1983. During the last quarter of the year, and through the first half of 1984, business investment increased steadily at a rate of 10 percent for the three-quarter period, driving the growth rate of GNP higher. While business investment took the lead role in 1984, retail sales and housing starts provided continued strength to the economy. Housing starts were high in the first quarter, relative to expectations, probably because of favorable weather in many parts of the country. Retail sales—led by automobile sales and consumer durable items, such as home appliances and consumer electronics—rose sharply in the second quarter. Real GNP increased at an annual rate of 8.6 percent for the first half of the year.

The strength of the first two quarters of 1984 appeared to recede beginning with the summer months, as the growth rate for retail sales fell off and sales declined for several months. Interest rates rose at the beginning of the

Table 1.2 *Real Gross National Product, Fourth Quarter 1983–Third Quarter 1984*

Year—Quarter	Billions of 1972 Dollars	Percent Change at Annual Rate
1983—4	1,572.7	5.9
1984—1	1,610.9	10.1
1984—2	1,638.8	7.1
1984—3	1,646.5 ^r	1.9 ^r

Note: “r” = revised

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Business Conditions Digest (Washington, D.C.: U.S. Government Printing Office, various issues)

second quarter and into the third quarter. Housing starts dropped slightly in response but remained relatively strong throughout the three-quarter period. Business inventories rose rapidly during the third quarter as many consumers lowered or maintained their spending rates. The GNP growth rate declined to 1.9 percent, approximately 1 percent below the long-term growth trend for the economy (Table 1.2).

Inflation remained exceptionally low during 1984. During the first six months, inflation rose at a seasonally adjusted annual rate of only 4.1 percent, as measured by the consumer price index (CPI). For the 12-month period that ended in June 1984, the CPI increased only 4.2 percent. Prospects for continued expansion and sustainable long-term growth were enhanced by expectations of a low inflation rate.

Interest rates followed the pattern of GNP relatively closely. As the economy expanded rapidly during the first and second quarters of the year, interest rates—both short- and long-term—grew consistently, with long-term public and private rates on three- to ten-year U.S. Treasury securities and high-grade municipal and corporate bonds peaking in June. As GNP growth declined in the third quarter, long-term rates immediately dropped. Short-term rates, measured by three-month Treasury bills, fell by the end of the third quarter and continued to fall in the fourth quarter. The availability of loanable funds was not a problem for small businesses at any point during the year.

The slowdown in the third quarter apparently caught wholesalers and retailers off guard as inventories accumulated rapidly at the end of the second quarter and during the entire third quarter. While the inventory-to-sales ratio was higher at the end of the third quarter than earlier in the year, inventories apparently remained well

controlled. Based on inventory buildup in the third quarter, lower profits were expected in the fourth quarter as retailers reduced prices to sell off surplus goods.

Federal Spending Federal spending has been low in this recovery compared to earlier post-recession periods, despite increased federal expenditure authority, particularly for defense. The flow of federal funds into the business community did not increase significantly during 1983. Increased government expenditures, however, contributed to economic growth in the first quarter of 1984, moving up at an annual rate of 9.4 percent compared to the last quarter of 1983. The rate of increase from the first to the second quarter of 1984 was even larger, with federal spending rising at an annual rate of 18.6 percent. Growth in government spending remained strong through the third quarter, increasing at an annual rate of 8.6 percent from July through September. Spending increases by the Government helped to partially offset the decrease in third quarter retail sales.

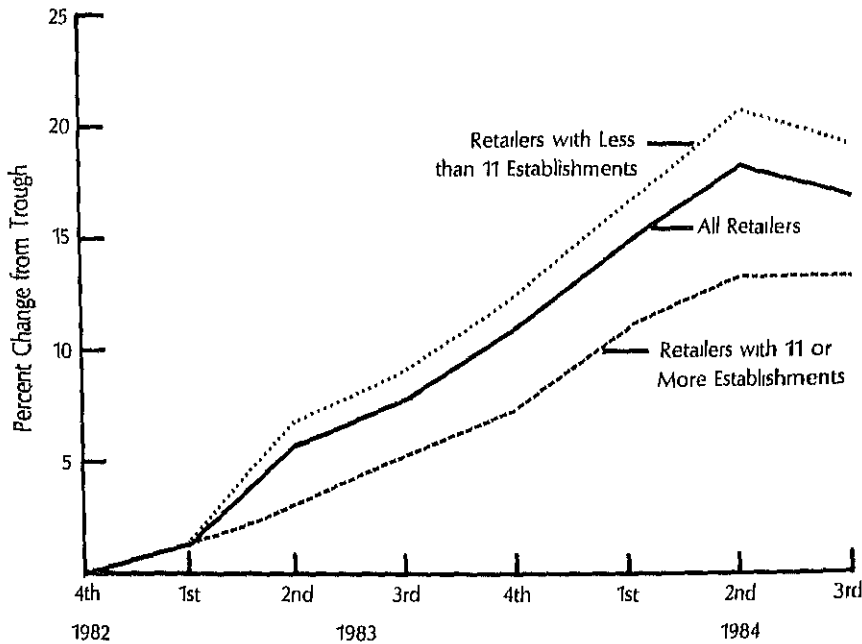
Small Business in 1984 The combination of two quarters of very strong GNP growth, followed by a relatively sharp slowdown in the third quarter, resulted in a very good year for small business. The growth rate of GNP at approximately 6 percent meant many real opportunities in 1984; small businesses moved quickly to take advantage of them.

Demand for goods and services expanded rapidly in the U.S. economy in 1984. Small businesses responded extremely well to the strong market demand by expanding output and sales. In addition, small businesses organized resources and initiated new businesses in an attempt to raise supply capacity to meet the demands of the marketplace. Income earned by small business proprietors also increased.

Retail Sales and Residential Construction Retail sales continued to climb during the first two quarters of 1984, with retail sales in small businesses increasing 7 percent compared to a 5.5-percent gain in large retail firms. The slower growth of the economy in the third quarter, however, changed the picture for small business retailers. In the third quarter, sales for small retailers declined by more than \$1 billion.¹ Large retailers managed to hold their sales constant despite the slow-

¹Percentage changes calculated from Bureau of the Census, U.S. Department of Commerce, *Current Business Reports*, "Monthly Retail Trade," Tables 1 and 3, various issues.

Chart 1.2 *Post Recession Performance of Retail Trade, Fourth Quarter 1982–Third Quarter 1984 (Percent Change from Trough in Fourth Quarter 1982)*



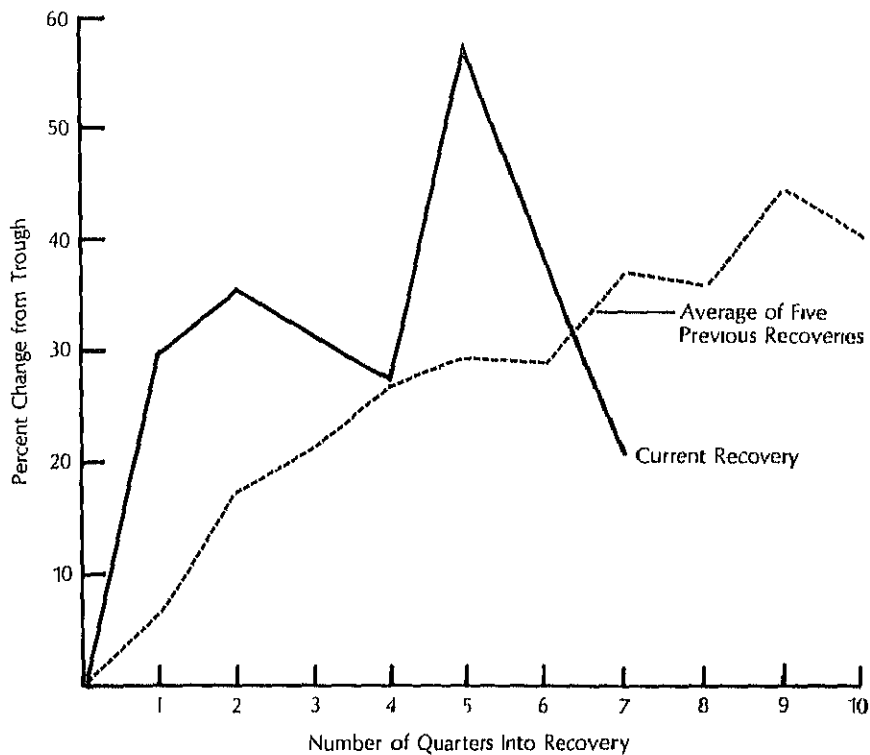
Source: U S Department of Commerce, Bureau of the Census, Current Business Reports, "Monthly Retail Trade" (Washington, D C : Government Printing Office, various issues).

down in the economy. Small retailers performed very well compared to large retailers during the 1982-1984 period (Chart 1.2). Retail sales showed more strength through the final months of the year.

Residential construction is another industry that is almost completely dominated by small businesses. Residential housing starts performed reasonably well during 1984 despite seesawing interest rates. Mortgage rates fell from January through March, rose from March through October, and declined for the remainder of the year. Favorable weather during January and February produced an unexpected increase in housing starts for those months. Housing starts for the remainder of the year were remarkably steady and slightly better than anticipated (Chart 1.3). As a consequence, small residential builders were active throughout the year and business startups were high in the residential construction industry.

Small special trade contractors (firms providing

Chart 1.3 *Post Recession Performance Comparison of Single Unit Housing Starts, Fourth Quarter 1982–Third Quarter 1984 (Percent Change from Trough in Fourth Quarter 1982)*



Source: U.S. Department of Commerce, Bureau of the Census, *Construction Report 20*, "Housing Starts" (Washington, D.C.: Government Printing Office, various issues).

plumbing, painting, electrical, masonry, and roofing services) performed exceptionally well during 1984. Many of these industries grew between 10 and 20 percent over 1983.² Other retail industry sales related to housing construction also made large gains during 1984. These industries included furniture, lumber, and other construction materials.

²Housing starts data are from Bureau of the Census, U.S. Department of Commerce, *Construction Report 20*, "Housing Starts," various issues. Growth rates for the special trade construction industries are estimates based on employment changes for the period from October 1983 to October 1984. Employment numbers are from the Bureau of Labor Statistics, U.S. Department of Labor, *Employment and Earn-*

*Other Small
Business-
Dominated
Industries*

Several retail industries, populated mainly by small businesses, also increased sales in 1984. Retail bakeries, for example, expanded more than 14 percent from October 1983 through October 1984. Radio, TV, and miscellaneous stores also expanded sharply, with sales up more than 20 percent. The large increase in sales in this category may have been attributable to the strength of the dollar and the relatively low prices of imported TV sets, video cassette recorders, and high fidelity audio equipment. In wholesale industries dominated by small businesses, durable goods wholesalers performed relatively well. Wholesale machinery dealers, whether providing equipment or supplies, showed above-average growth. Among small business-dominated wholesale industries, only chemical and allied-products wholesalers and petroleum and petroleum-product wholesalers showed real declines during 1984.³ These declines may have been partly because of the continuing oil glut and relatively weak prices for petroleum products, and partly because of slow growth among industries using chemicals or petroleum as major inputs in their production processes.

Small business service firms, especially computer and data processing firms, advertising and mailing firms, and hotels and motels also showed strongly rising sales curves. Small firms providing legal, health, and social services continued to register strong expansion, which has characterized their growth over the last few years. Only amusement and recreation services showed a slight downturn during 1984, as all other small business-dominated service industries reported real growth from October 1983 to October 1984.

*Business
Formation and
Failure*

The number of business openings and closings is an important indicator of small business' ability to shift resources quickly in or out of the production process. Business startups and closures represent thousands of individual decisions reflecting the past history of individual firms and their expectations of future sales and profits.

*Business
Formation*

Few business start-up decisions are registered directly with the Federal Government. Some startups are noted by state tax officials for sales tax, unemployment insur-

ings, December 1983, and unpublished October 1984 data to be printed in the December 1984, *Employment and Earnings*.

³Projected sales increases are based on employment changes from October 1983 to October 1984, reported in *Employment and Earnings*, note 2 *supra*.

Table 1.3 *Business Formations and New Incorporations, 1980-June 1984 and Selected Subperiods*

	Business Starts	Percent Change at Annual Rate	Incorporations	Percent Change at Annual Rate
January-June 1984	37,907 ^p	7.0	325,862 ^p	8.6
January-June 1983	35,439	—	300,045	—
1983	100,868	11.2	600,400	5.9
1982	90,757	-1.5	566,942	-2.5
1981	92,161	1.5	581,242	8.9
1980	90,840	—	533,520	—

Note: "p"—preliminary. The incorporation figures are not seasonally adjusted.

Sources: Dun and Bradstreet, Inc., "Quarterly Business Starts" (various issues), and Dun and Bradstreet, Inc., "Monthly New Incorporations" (various issues).

ance, and other purposes. Most are noted primarily at the local level where business licenses are issued and where local permits covering health and safety or economic rules are applicable.

Several available data series can serve as proxies for business startups. The Dun and Bradstreet Corporation (D&B) provides two basic data series: new business incorporations and new business startups. Business incorporations are obtained from the Secretaries of State for each of the 50 states. New business startups are derived from new businesses entering the D&B Market indicator files, which are maintained primarily to support credit or other business inquiries (Table 1.3).

Both data series reflect the growth of the economy in 1983 and in the first half of 1984. New incorporations may reflect one of several intentions: the actual startup of a new business; the intention to start a new business, which may never be realized; the conversion of an existing sole proprietorship or partnership; or the creation of a subsidiary corporation for tax or other business reasons. Finally, new incorporations may not reflect a new business at all but may simply represent a rearrangement of ownership or control.

New business starts serve as a more reliable indicator, reflecting actual business start-up dates, adjusted for recently reported changes in previously existing businesses. The 7-percent increase in business starts for the first half of 1984 can be divided into a 9.3-percent increase in the first quarter and a 6-percent increase in the second quarter. Second-quarter business starts showed the greatest decline in the manufacturing and the whole-

sale and retail sectors. Startups increased in the agricultural, construction, and service sectors.⁴

Business incorporations increased approximately 9 percent in both the first and second quarters of 1984, running at a record pace for the half year. Despite the shortcomings of the incorporation data—because many incorporations do not reflect new startups—changes in incorporations tend to parallel changes in business startups. Incorporations can be used as a proxy for startups in determining whether the trend in startups is up or down over any three-month, six-month, or longer time period. The increase in business startups during the first half of 1984 reflects the rapid growth of the economy during the same period.

Business Closures

Even less data are available on business closures than on business startups, as no government agency regulates or notes their occurrence. Closures traditionally have been tracked through two data series: business failures published by D&B and business bankruptcies published by the Administrative Office of the U.S. Courts based on information supplied by the bankruptcy courts. A business failure is defined as the closing of a business that involves a loss by a creditor. This definition is broader than the definition of a bankruptcy, which is an official petition to a federal district court from a business that cannot meet its debt obligations, and asks for either reorganization of its debts or liquidation of its assets. All bankruptcies are business failures, but not all business failures are bankruptcies.

Not all business closings are failures: the majority are voluntary closings under which all debt obligations are met. Closures occur for a variety of reasons, ranging from a desire to retire after a lifetime of business operation, to an intent to move resources to more highly valued uses by liquidating one business and using the capital proceeds to begin another. Until recently, no institution had followed voluntary closings. D&B recently introduced an index of these closings, but it will take some time to accumulate information from that index.

The number of bankruptcies and business failures in the first six months of 1984 virtually equalled the number in the first six months of 1983 (Table 1.4). Some observers have expressed surprise that closure rates have remained high despite the obvious strength of the

⁴The Dun and Bradstreet Corporation, "Current Economic Indicators," September 28, 1984.

Table 1.4 *Business Failures and Business Bankruptcies 1980-June 1984 and Selected Subperiods*

	Business Failures	Percent Change at Annual Rate	Bankruptcies	Percent Change at Annual Rate
January-June 1984	15,235	0.6	33,167	-0.9
January-June 1983	15,137	—	33,225	-
1983	31,334	23.6	58,898	10.5
1982	25,346	48.7	65,807	38.4
1981	17,044	45.4	47,555	9.6
1980	11,719	-	43,374	-

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy from Dun and Bradstreet *Weekly Failures* (various issues), and from the U.S. Administrative Office of the Courts, Statistical Analysis and Reports Division, unpublished data.

economy. Two major factors contribute to this apparent anomaly.

First, the rate of closures (failures and bankruptcies) appears to have a cyclical component which lags behind the regular business cycle by six to twelve months. Bankruptcies and business failures, for example, continued to increase during the early part of 1983, even though the economic recovery began in November 1982. The number of bankruptcies declined relatively sharply in the second half of 1983, while the number of business failures continued to increase throughout 1983 and in the first quarter of 1984.

Second, the absolute level of bankruptcies and business failures is influenced by another variable, the number of business startups in earlier periods. As the number of business startups increases, the number of business failures and bankruptcies in later periods rises. Because incorporations and startups have been running at record levels for three of the last four years, higher levels of bankruptcies and business failures can be anticipated in the near future (Table 1.3). If startups continue at a rapid pace, continued high closure rates can be expected.

The abrupt decrease in bankruptcies in 1983 relative to business failures can be explained by the differences in the populations from which the statistics are drawn. Bankruptcy statistics are taken from a universe of approximately 14 million businesses, and include many bankruptcies filed by very small sole proprietorships. Failure statistics are taken from a sample of approximately 3 million businesses. These firms are, on average, larger than the businesses in the bankruptcy population.

Because of unfavorable business conditions in 1981 and 1982, fewer very small firms had the resources avail-

Table 1.5 *Change in Wage-and-Salary Earnings, Proprietorship Earnings, and Corporate Profits, 1980-June 1984 and Selected Subperiods*

	Wage & Salary Earnings (Billions)	Percent Change	Proprietorship Earnings (Billions)	Percent Change	Corporation Profits (Billions)	Percent Change
Jan.-June 1984 ¹	1,763.1	9.1	152.3	33.7	210.8	41.8
Jan.-June 1983 ¹	1,616.7	—	113.9	—	148.7	—
1983	1,649.8	5.6	120.9	11.3	167.2	25.1
1982	1,562.5	5.0	108.7	-10.4	133.6	-22.8
1981	1,487.7	10.1	121.3	6.3	173.2	7.0
1980	1,351.6	—	114.1	—	161.9	—

¹ Six-month changes expressed in annual rates

Sources: Wage-and-Salary Earnings and Proprietorship Earnings U.S. Department of Commerce, Bureau of Economic Analysis, Statistics Division, and Corporation Profits Council of Economic Advisers, *Economic Indicators* (Washington, D.C.: U.S. Government Printing Office, various issues)

able to stay in business until the latter half of 1983. Bankruptcy rates were higher, therefore, in the first half of 1983 and lower in the second half. The population from which business failures are measured systematically excludes very small businesses. Therefore, the remaining businesses had more resources and tended to fail later in 1983 or in 1984, keeping the failure rate relatively high for a longer period.

Small Business Earnings

Net income for sole proprietorships and partnerships was up 33.7 percent during the first six months of 1984 compared to the first half of 1983 (Table 1.5). The 1984 performance was a major improvement over the 11.3-percent gain in 1983 and the 10.4-percent decline in 1982. Proprietorship income, like corporate profits, varies with the business cycle, with higher earnings in the growth phase of the cycle offset by lower earnings during the downswing. Wage-and-salary earnings tend to vary less and generally remain positive during all phases of the cycle.

Corporate profits for the first six months of 1984 were up 41.8 percent from the first six months of the previous year, partially offsetting lower earnings during the 1982 recession. Wage-and-salary earnings were up 9.1 percent for the first six months of 1984, considerably exceeding the inflation rate, which showed only a 4.2-percent gain for the 12 months ending in June 1984. However, this growth in wage-and-salary earnings reflects increases not only in individual wages and salaries but also in the number of workers.

Job Generation in Small Business

The economic recovery of 1983 and the continued expansion of the American economy in 1984 produced significant employment gains. A total of 5,676,000 new jobs were created from November 1982, the bottom point of the 1981-1982 recession, through October 1984 (Table 1.6). This increase represents wage-and-salary jobs in nonfarm, non-government industries. A broader measure of employment change in the economy, developed from the Current Population Survey of the U.S. Census, puts the total employment increase for the period at 6,513,000. Measured by household survey, this total includes changes in self-employment as well as wage-and-salary employment; the total increase in employment from November 1982 to October 1984 was 7.3 percent. Employment data are used as a proxy for small business output because of the lack of output information by size class of business. Output and employment change in the same direction and to about the same

Table 1.6 *Nonfarm Employment and Employment Change, November 1982–October 1984 (Thousands)*

	Establishment Data		Household Data	
	Total Nonfarm Employment	Employment Change	Total Nonfarm Employment	Employment Change
1982				
November	88 674	—	95 537	—
December	88 646	– 28	95 550	13
1983				
January	88 827	181	95 734	184
February	88 728	– 99	95 757	23
March	88 945	217	95 930	173
April	89 259	314	96 214	284
May	89 578	319	96 388	174
June	89 927	349	97 264	876
July	90 274	347	97 726	462
August	89 918	– 356	– 98 035	– 309
September	91 018	1,100	98 568	533
October	91 345	327	98 730	162
November	91 688	343	99 349	619
December	92 020	338	99 585	236
1984				
January	92 391	365	99 918	333
February	92 846	455	100 496	578
March	93 058	212	100 859	363
April	93 449	391	101 009	150
May	93 786	337	101 899	890
June	94 135	349	102 344	445
July	94 350	215	102 050	– 294
August	94 523	173	101 744	– 306
September	94 754	231	101 923	179
October	95 195	441	102 472	549
Percent Change				
November 1982 to October 1984		7.4		7.3

Sources: Establishment Data: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings* (Washington, D.C.: U.S. Government Printing Office, various issues). Household Data: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey* (various issues).

extent. Comparisons of employment changes in small versus large business provide evidence of the relative changes in business output or sales.

Detailed industry data provided by the Bureau of Labor Statistics (BLS) are not available by employment size class. However, the data can be divided into two categories according to whether a particular industry is dominated by small business. Small business-dominated

Table 1.7 *Percent Change in Employment in Small Business-Dominated Industries versus Employment in Large Business-Dominated Industries by Industry Division, October 1982–October 1984*

Industry Division	Small Business-Dominated Industry	Industry Division	Large Business-Dominated Industry
All Industries	11.4	7.9	5.3
Mining	—	- 5.7	- 5.7
Construction	18.9	13.6	- 10.6
Manufacturing	—	7.2	7.2
Transportation	10.8	3.1	- 1.0
Wholesale Trade	7.6	7.2	0.3
Retail Trade	9.9	9.1	7.5
Finance	12.7	7.0	3.9
Services	12.6	9.3	5.5

Note: The ten major industrial categories in the economy are referred to in this report as industry divisions. Sub-industries within each industry division are referred to in this report as industries.

The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade and retail trade divisions are classified as small business-dominated. October 1984 data are preliminary.

Source: October 1982 data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, December 1982; October 1984 data from unpublished data provided by the Bureau of Labor Statistics.

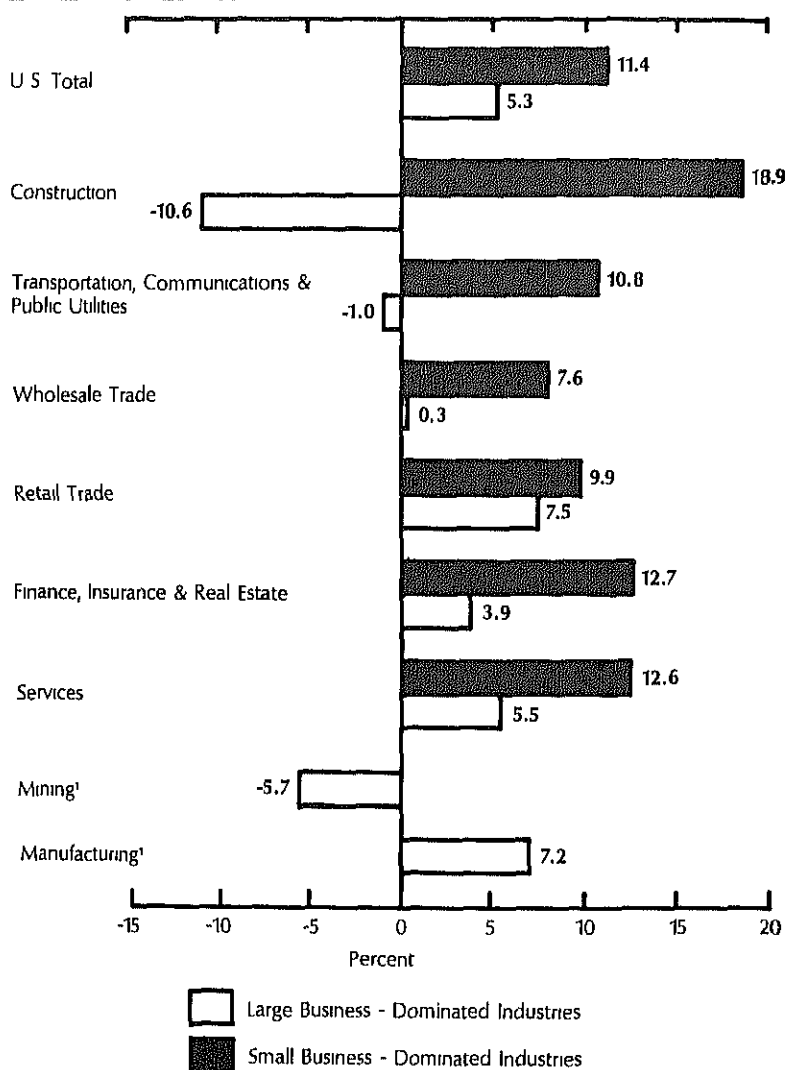
industries contain a minimum of 60 percent of their employment or sales in firms with fewer than 500 employees.⁵ Appendix Tables A1.27 and A1.28 provide listings of small and large business-dominated industries as reported by BLS.

Employment gains for major industries and for the small and large business-dominated subsectors of those industries are shown in Table 1.7, which covers the two-year period of the recovery and expansion following the 1981-1982 recession. The total employment gain for all small business-dominated industries during the period was 11.4 percent, compared to 5.3 percent in large business-dominated industries (Chart 1.4).

Employment gains in small business-dominated industries in construction (18.9 percent), finance, insurance and real estate (12.7 percent), and services (12.6 percent) are impressive when compared to the gains made in

⁵In some small business-dominated industries, as much as 40 percent of total sales or employment are in large businesses. Therefore, change in total employment in these industries may reflect changes in large business employment, as well as small business employment.

Chart 1.4 *Percent Change in Employment in Small Business-Dominated Industries versus Large Business-Dominated Industries by Selected Industry Division, October 1982--October 1984*



The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, there are no small business-dominated industries in the mining and manufacturing industry divisions.

Note: October 1984 data are preliminary.

Source: October 1982 data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earning*, December 1982; October 1984 data from unpublished data provided by the Bureau of Labor Statistics.

similar, large business-dominated industries. In construction, the small business-dominated industries had employment gains of 18.9 percent, while the large business industries showed an employment loss of 10.6 percent. The relative strengths of the small business gains in wholesale and retail trade are also significant.

*Fastest and
Slowest Growing
Industries*

The rapid growth of the economy in 1983 and 1984 produced employment growth possibilities for most industries. However, the relative strength of employment growth in American industries varied considerably, from a 50.7-percent gain in the personnel supply service industry to a 10.7-percent loss in the heavy construction industry (Table 1.8). Fast-growing small business-dominated industries exhibited higher rates of employment growth than fast-growing large business-dominated industries. At the slow end of the growth spectrum, large business-dominated industries did not increase employment as much as small business-dominated industries.

It is difficult to draw meaningful conclusions about more highly disaggregated industries. For example, the average growth rates in retail trade industries varied widely. Employment in radio, TV, and miscellaneous stores was up 30.8 percent, for example, while employment in sporting goods, toy, and hobby stores rose only 1.2 percent. Employment in liquor stores and household appliance stores fell during the two-year period. Among large business-dominated retail industries, miscellaneous general merchandise stores increased employment by 14.7 percent, while employment in variety stores and men's and boys' clothing stores declined.⁶

The construction industries dominated by small businesses all showed strong growth. Businesses in carpentry and flooring, masonry, stonework, plastering and painting; paperhanging and decorating; roofing and sheet metalwork, and residential building contractors all had high rates of employment growth. Various service industries also grew rapidly. Among small business-dominated services, business computer and data processing services showed almost 33-percent employment growth. Personnel supply services, a large business-dominated service industry, grew more than 50 percent during the two-year period. Other business services, including services to buildings, accounting and bookkeeping and mailing, re-

⁶See Appendix Tables A1.26 and A1.27 for the industry detail supporting this analysis.

Table 1.8 Fastest and Slowest Growing Small Business-Dominated and Large Business-Dominated Industries as Measured by Employment Change, October 1982–October 1984

Small Business-Dominated Industries	Percent	Large Business-Dominated Industries	Percent
Savings & Loan Associations	42.6	Personnel Supply Services	50.7
Operative Builders	39.0	Motion Picture Production & Services	26.6
Computer & Data Processing Services	32.9	Security Brokers & Dealers	26.5
Carpentry & Flooring	31.4	Services to Buildings	20.3
Radio, TV, & Miscellaneous Stores	30.8	Water Transportation	15.7
Masonry, Stonework, & Plastering	30.4	Misc. General Merchandise Stores	14.7
Painting, Paper Hanging, & Decorating	24.9	Personnel Credit Institution	10.7
Roofing & Sheet Metal Work	23.5	Medical Services & Health Insurance	10.3
Mailing, Reproduction & Stenographic	22.7	Accounting and Bookkeeping	9.8
Residential Building Contractors	22.4	Elementary & Secondary Schools	9.5
Combined Real Estate, Insurance Offices	-7.9	Heavy Construction	-10.7
Taxicabs	-6.9	Motion Picture Theaters	-10.3
Petroleum & Petroleum Products	-6.0	Railroad Transportation	-9.2
Pipeline, except Natural Gas	-5.0	Telephone Communications	-7.4
Household Appliance Stores	-4.6	Local & Suburban Transportation	-4.6
Chemicals & Allied Products	-3.7	Variety Stores	-4.0
Liquor Stores	-3.7	Gas Production & Distribution	-3.2
Real Estate Operators & Lessors	2.9	Men's & Boys' Clothing	-2.6
Amusement & Recreation Services	1.6	Hospitals	-1.9
Sporting Goods, Toys, & Hobby Goods	1.2	Membership Organizations	-1.7

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy, from the U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, January 1984 and unpublished October 1984 data to be printed in the December 1984 edition of *Employment and Earnings*, Table B-2. In this table, small business-dominated industries contain a minimum of 60 percent of their employment or sales in firms with fewer than 500 employees. The distribution of employment by firm size class is from the Small Business Data Base of the Office of Advocacy, U.S. Small Business Administration.

production, and stenographic services also showed high job growth rates

*Job Generation:
1976-1984*

Employment growth in 1983 and 1984 was exceptionally strong, not only in small business but also in the overall economy. The 7.3-percent increase in total nonagricultural employment represents an impressive achievement. To understand the dimensions of that accomplishment, however, employment growth in 1983 and 1984 should be compared to earlier two-year periods.

The U.S. Establishment Longitudinal Microdata File (USELM) provides an employment data base covering the years 1976 through 1982.⁸ This data base contains information on employment and employment change, and on establishments and establishment change for the entire nonagricultural economy. The USELM data were developed primarily from information provided by D&B covering businesses in the U.S. economy in 1976, 1978, 1980, and 1982. Each annual data file provides a cross-sectional view of the economy at a particular time.

Approximately five million establishments and four million enterprises are found in each annual file.⁹ Table 1.9 shows the percentage change in employment by employment size of enterprise for various two-, four-, and six-year periods from 1976 to 1982. The top row of the table specifies the distribution of employment by employment size class at the end of 1976. One significant finding is that small businesses produce a more-than-proportionate share of net new jobs relative to the small business share of total employment. Small firms with fewer than 100 employees represented 37.4 percent of total employment in 1976, and generated 52.6 percent of net employment growth from 1976 to 1982. Employment growth in firms with fewer than 100 employees exceeded that segment's job share in every period except 1978-1980.¹⁰ The same conclusion is valid when a small

⁷ *Ibid.*

⁸ For a description of the USELM file and a comparison with the earlier United States Establishment and Enterprise Microdata file (USEEM) see Appendix C of this report, *The State of Small Business 1985*, or Appendix C of *The State of Small Business: A Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1984); hereafter, *The State of Small Business, 1984*.

⁹ The file is usually dated December 31 of each year. Dun and Bradstreet files are updated on a daily basis, reflecting changes reported to the Dun and Bradstreet field offices.

¹⁰ The 1978-1980 period appears to be an aberration. Earlier work by other researchers including David Birch and Susan McCracken of

Table 1.9 *Percent Change in Employment by Employment Size of Firm, Selected Time Periods*

	Total	Employment Size of Firm					
		1-19	20-99	<100	100-499	<500	500 +
Total Employment, 1976							
Percent of Total Employment in Each Size Class, 1976	75,961,361 100.0						
		20.5	16.9	37.4	14.3	51.7	48.3
	Job Growth (Number)	Job Growth As Percent of Total Employment	Job Growth Attributable to Each Size Class				
1976-1982	11,870,978	15.6	38.5	14.1	52.6	9.8	62.4
1976-1980	10,891,982	14.3	29.1	13.4	42.5	10.6	53.1
1976-1978	6,426,986	8.5	36.3	15.8	52.1	10.4	62.5
1978-1980	4,464,996	5.4	29.9	5.9	35.8	7.3	43.1
1980-1982	978,997	1.1	232.6	-9.8	222.8	-31.4	191.4
1982-1984 ¹	6,302,000	7.3					-91.4

¹November 1982-October 1984 employment change from U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, November 1984. See the Appendix of this chapter for further discussion of Table 1.9

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data, and U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, November 1984

business is defined as an independent enterprise with fewer than 500 employees.

Firms in the 1-19 employee column, representing 20.6 percent of jobs, produced 38.5 percent of the jobs generated between 1976 and 1982, and 232.6 percent of net jobs created between 1980 and 1982. The 1980-1982 results appear startling, but they can be put into context by examining the total distribution of employment gains during those years. The next-to-last row in the table covers employment changes from 1980 to 1982. Total employment growth was only about 1.1 percent during the period. In round terms, this amounts to approximately 1 million new jobs generated during the recession years of 1981 and 1982.¹¹

All of the size classes above the 1-19 employee category show net decreases in jobs generated during the recession. Large firms with more than 500 employees lost approximately 900,000 jobs (equivalent to 91.4 percent of the net job gain in the first column). Firms in the 100-499 employee size category also lost a significant number of jobs,¹² and there was a smaller loss in the 20-99 employee size class. The 232.6-percent increase in the 0-19 employee size category was offset by a cumulative 132.6-percent loss in the larger size groups.

Small Business and the Dynamics of Change

A major by-product of the Small Business Data Base (SBDB) job generation analysis is a data base consisting of changes in the number and size of establishments operating in the American economy. Because the SBDB analysis uses microdata, i.e., data on individual establishments, changes in establishments and their employ-

MHI, and Michael Tertz and Associates of the University of California, Berkeley confirms the general pattern of more-than-proportionate job growth in small businesses. See *The State of Small Business: A Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1983), Chapter 3, pp. 61-70.

¹¹ The 1.1-percent increase in employment should be compared to 1982-1984, when employment increased 7.3 percent, and 1976-1978, when employment increased 8.5 percent.

¹² See Appendix A1.25 for the numbers equivalent to the percent changes in Table 1.9. The numbers differ slightly from those published in Table 1.11 of *The State of Small Business, 1984*, p. 26. The earlier results were derived from the United States Establishment and Enterprise Microdata File (USEEM), the precursor file to the United States Establishment Longitudinal Microdata File (USLEMF). The USLEMF file was used to produce the summary results shown in Table 1.9. Differences in absolute numbers reflect differences in methodology introduced in the USLEMF file.

ment levels can be readily tracked. The SBDB also contains information on ownership linkages between individual establishments and multi-establishment enterprises, making it possible to organize information about changes in establishments according to the employment size of the owning enterprises.

Job generation analyses have now been carried out for the 1976—1982 period, and for two- and four-year periods between 1976 and 1982. Each job generation analysis, whether covering a two-, four-, or six-year period, produces a set of establishment change tables that track gross flow changes in business establishments.

Dimensions of Change

Most data on establishment change in the economy are presented in terms of net change. The Internal Revenue Service, for example, reports that the net increase in the number of business returns filed is equal to some positive number in each year. The data developed through the SBDB job generation analyses track flows into and out of the existing pool of establishments. The net change in the number of establishments for any period is determined by noting the number of establishments operating at a point in time, adding the number of births of new establishments, and subtracting the number of establishments that cease business activity.

The data presented in this section suggest that the dimensions of change in the American economy, i.e., the gross flows of establishment births and deaths and employment expansions and contractions over any period, produce a much more active and dynamic economy than normally described. Attention to the relatively large size of the gross flows may provide some insight on appropriate public policy in support of small business.

The net change in the number of establishments with employees is relatively small (Table 1.10). The slightly larger increase shown in 1980-1982 is consistent with behavior in other recessions. As the unemployment rate increases, and relatively more people are out of work, the number of business startups increases.

The small net change masks the much larger dimensions of the gross flows of births and deaths of establishments which produce the change. Births and deaths of establishments are shown relative to the number of establishments in business throughout each period in Table 1.11.¹³

¹³Data presented here are for establishments and not the owning enterprises. For small enterprises with fewer than 20 employees, the terms

*Business Births
and Deaths*

The gross flow of births and deaths is much larger than the net change. The number of deaths in any period gives ample evidence of the riskiness associated with business ventures.

The number of business births is influenced by fluctuations in the economy, both positive and negative. Increases in the rate of growth of GNP are associated with increases in the number of business startups. An increase in the unemployment rate may also be associated with an increase in business startups. Because unemployed individuals have no wages to give up, their cost of starting a business is lower than the cost to an individual who must give up other work on a voluntary basis.

Business startups and closures may also occur in reaction to longer-term changes in the state of the world. A shift in consumer tastes or preferences, for example, will create a demand for new or improved goods or services which may be met by existing firms or by new, primarily small businesses. Technological change may also precipitate new businesses, either directly or indirectly. The development of microchips and micro-computers, for example, provided opportunities for small businesses as computer manufacturers, assemblers, software developers, distributors, maintenance and repair technicians, and consultants.

*Employment
Expansions and
Contractions*

Where demand for the output of a particular industry is variable, expansion or contraction of output by existing firms may be sufficient to accommodate all of the change needed to meet a shift in demand. The patterns of establishment expansion and contraction confirm the extent of the dynamic changes occurring in the economy: the longer the period, the fewer the establishments showing constant employment (Table 1.1.2).

*Patterns of
Change in Small
and Large
Business*

Demand fluctuations encountered in a business cycle, and demand shifts resulting from innovations or changes in consumer tastes and preferences, are met by a combination of births, deaths, expansions, and contractions of businesses. Change is clearly the norm for the typical establishment in the American economy. Does the extent of change vary by size of firm? The proportions of births, deaths, contractions, and expansions are remark-

enterprise and establishment usually refer to the same entity, i.e., a single-establishment enterprise. The effects on a local community of a business birth or death are similar, whether the firm is an establishment or an enterprise.

Table 1.10 *Number of Establishments in All Industries in the USELM File*

	Number of Establishments	Two-Year Change	Percent Change
1976	4,280,809	—	—
1978	4,416,874	136,065	3.1
1980	4,552,673	135,719	3.1
1982	4,723,718	171,045	3.8

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table 1.11 *Establishment Births, Deaths, and Survivors for Selected Time Periods*

	Establishments				
	Initial Population	Deaths	Surviving	Births	Final Population
1976–1978	4,280,809	– 702,494	3,578,315	838,559	4,416,874
1978–1980	4,416,874	– 390,255	4,026,619	526,054	4,552,673
1980–1982	4,552,673	– 514,984	4,037,689	686,029	4,723,718
1976–1982	4,280,809	– 1,269,142	3,011,667	1,712,051	4,723,718

Note: The sum of the births (deaths) over the two-year periods does not equal the number of births (deaths) shown for the six-year period from 1976 to 1982. An establishment born in 1977, for example, would be counted as a birth in the 1976–1978 period. If the establishment died in 1979, it would not be listed as a birth in the 1976–1982 calculation. (It would show as a death in the 1978–1980 period.) The 1976–1982 births represent establishments not in the file in 1976, but in the file in 1982. Deaths for 1976–1982 represent establishments in the file in 1976, but not in the file in 1982.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table 1.12 *Number of Establishments Which Survived for Differing Periods of Time Categorized by Type of Employment Change for Each Establishment*

	Number of Establishments With			
	Establishments Surviving Through Period	Expanding Employment	Contracting Employment	Constant Employment
1976–1978	3,578,315	936,075	553,972	2,088,268
Percent		26.2	15.5	58.4
1976–1980	3,305,144	1,141,102	730,603	1,433,439
Percent		34.5	22.1	43.4
1976–1982	3,011,666	1,217,554	811,583	982,529
Percent		40.4	26.9	32.6

Note: Percent detail does not add to 100 because of rounding.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table 1.13 *Number of Establishments by Employment Size of Firm and Categorized by Type of Employment Change for Establishments Existing in 1976 or Born Between 1976 and 1982*

Employment Size of Firm	Establishments, 1976-1982				
	With Expanding Employment	With Contracting Employment	With Constant Employment	Born During 1976-1982	Total Establishments 1982
Total	1,217,554	811,583	982,529	1,712,052	4,723,718
Percent	25.8	17.2	20.8	36.2	
0-19	929,008	592,317	808,307	1,295,751	3,625,383
Percent	25.6	16.3	22.3	35.7	
20-99	153,659	130,474	89,045	171,316	544,494
Percent	28.2	24.0	16.4	31.5	
100-499	54,462	39,066	32,861	86,396	212,785
Percent	25.6	18.4	15.4	40.6	
500 +	80,425	49,726	53,316	158,589	341,056
Percent	23.6	14.6	15.6	46.5	

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

ably consistent across size class of enterprise (Table 1.13).

Relatively more establishments owned by the smallest enterprises (fewer than 20 employees) show constant employment, and relatively fewer show contracting employment. Establishments owned by the largest enterprises (more than 500 employees) appear to exhibit contracting employment or constant employment less frequently than establishments owned by enterprises in other size classes. Differences between enterprise size classes in establishment birth rates appear to be significant. Constant-employment establishments are relatively infrequent no matter what size establishment is being considered.

The major differences between size classes in the patterns of change may run against intuitive expectations. Larger enterprises with more than 100 employees show a greater proportion of establishment births than smaller enterprises (Table 1.14). Most births of establishments in small enterprises with fewer than 100 employees represent new single-establishment enterprise startups, i.e., actual new business births; most establishment births in large enterprises represent additions to already existing enterprises, with very few new enterprise startups.

Conclusion

American business is in a state of constant change. The birth, death, growth, or contraction of a business may reflect primarily internal factors, such as the manage-

Table 1.14 *New Independent and Affiliated Establishment Startups by Employment Size of Firm, 1976–1982 (Percent of 1976 Population)*

Establishment Type	Employment Size of Firm				
	Total	<20	20–99	100–499	500 +
Independent	36.6	37.9	23.9	15.3	6.9
Affiliated	51.4	51.1	45.3	55.7	54.7

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

ment capability of the entrepreneur. However, the behavior of the business also may be strongly influenced by factors outside the firm, such as the levels of demand for products or services produced or the degree to which demand shifts in some relatively unpredictable fashion.

The Office of Advocacy of the Small Business Administration is currently sponsoring several studies, which examine how small businesses confront and adapt to the changing conditions in the marketplace. These studies may significantly improve the ability to evaluate the role small businesses play in economic change and the effect specific federal policies have on small businesses.

The appendix to this chapter provides summary tables and several examples of how to use both job generation data and establishment change data to analyze the dynamics of growth by geographic region or by major industry.

Appendix The SBDB: A Tool for Economic Analysis

The USELM file of the Small Business Data Base (SBDB) provides longitudinal data useful for many types of economic analyses of particular industries, geographic areas, or business size category.¹ Several examples of such analyses follow.

Industry Changes Over Time

The enhanced capability of the recently completed USELM file allows for many useful types of job-change analysis. For example, Table A1.15 shows the percentage change in job generation by major industry for selected periods between 1976 and 1982. The service industry, along with the finance, insurance, and real estate industries, is heavily represented by small businesses and showed strong growth between 1976 and 1982. During this six-year period, the mining sector also exhib-

¹See Appendix C of this report for a description of the Small Business Data Base and its uses.

Table A1.15 *Employment Growth by Industry Division for Selected Time Periods (Percent)*

Industry Division	1976-1982	1976-1978	1978-1980	1980-1982
All Industries	15.6	8.5	5.4	1.1
Agriculture, Forestry & Fishing	4.9	4.3	2.7	1.4
Mining	37.6	13.1	9.8	10.8
Construction	7.9	7.9	1.0	-1.1
Manufacturing	5.3	6.5	5.0	-5.8
Transportation, Communications & Utilities	13.0	5.4	6.6	6
Wholesale Trade	15.2	8.9	5.2	5
Retail Trade	15.6	8.1	5.3	1.6
Finance, Insurance & Real Estate	19.3	7.0	3.8	7.5
Services	29.3	12.4	7.4	7.0

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

ited very strong employment growth; however, this sector is small compared to other major industries (Table A1.15). Industries traditionally considered small business industries, such as construction and the wholesale and retail trades, showed different rates of growth.

Specifically, the growth in the trade industries is in the middle of the distribution; growth in the construction industry occurs toward the lower end of the growth range over the six-year period.

Employment Change by Size of Firm

Table A1.16 dramatically demonstrates that firms with fewer than 20 employees had the highest employment growth rates. A comparison of the first and last columns of the table shows that the rate of employment growth in firms with fewer than 20 employees in each industry between 1976 and 1982 generally exceeded the growth rate for the entire industry, except in retail trade. Employment growth in small firms with fewer than 20 employees clearly lags the total growth for the industry. The major contribution to growth in the retail industry occurred in enterprises with 500 or more employees.

The small business-dominated construction industry and the agriculture, forestry, and fishing industries show declining employment in firms with more than 20 employees. Over the six-year period, employment increased for all size categories within all other industries. Patterns in employment growth across various size categories within an industry vary from industry to industry. For example, in the retail trade; finance, insurance, and real estate, and service sectors, employment growth in enterprises with 500 or more employees exceeds em-

Table A1.16 *Percent Change in Job Generation by Industry Division and Employment Size of Firm, 1976-1982*

Industry Division	<20	Employment Size of Firm			
		20-99	100-499	500 +	Total
All Industries	29.3	13.1	10.7	12.2	15.6
Agriculture, Forestry & Fishing	21.8	-7.7	-10.9	-13.8	4.9
Mining	72.1	52.3	59.2	24.1	37.6
Construction	24.8	-2.1	-14.1	-1.4	7.9
Manufacturing	42.7	10.7	2.1	1.1	5.3
Transportation, Communications & Utilities	33.9	11.4	8.0	10.3	13.0
Wholesale Trade	28.9	8.2	12.7	4.7	15.2
Retail Trade	9.5	10.7	20.4	24.6	15.6
Finance, Insurance & Real Estate	46.6	14.3	7.6	13.9	19.3
Services	52.6	26.2	19.6	26.2	29.3

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table A1.17 *Percent of Total and Growth of Manufacturing Employment Attributable to Each Size Category by Employment Size of Firm, Selected Time Periods*

	Total	Employment Size of Firm					
		1-19	20-99	< 100	100-499	< 500	500 +
Percent of Employment by Size Category, 1976	100	7.0	12.7	19.7	14.7	34.4	65.6
Percent of Employment Growth Contributed by Size Category							
1976-1982	100	56.0	25.4	81.4	5.7	87.1	12.9
1976-1980	100	20.6	13.7	34.3	9.8	44.1	55.9
1976-1978	100	26.8	17.5	44.3	13.2	57.5	42.5

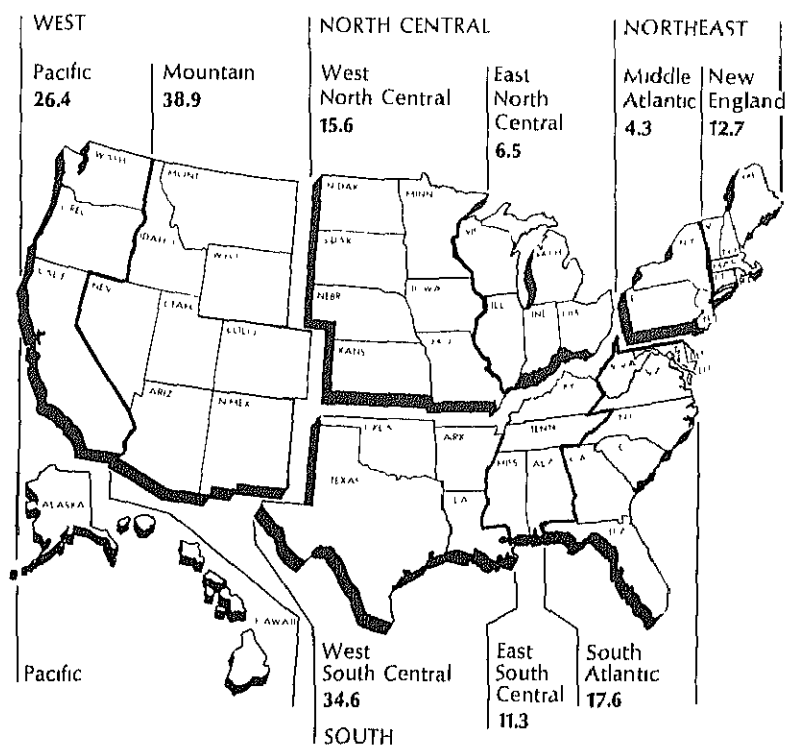
Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

ployment growth in the 100-499 employee size category. In the manufacturing and wholesale trade sectors, the results are reversed.

Employment Changes in Manufacturing

Smaller businesses are a dynamic force in the American manufacturing sector. The first row of Table A1.17 shows the percentage distribution of employment within manufacturing by size class of enterprise. The next three rows of the table present employment change within different size classes for different time periods, providing a basis for comparing the change in employment with the total

Chart 1.5 Job Generation by Census Region, 1976-1982 (Percent)



U.S. Total : 15.6

Source: U.S. Small Business Administration, Small Business Data Base, unpublished data

employment in the size category. For example, from 1976 to 1982, 56 percent of the total employment growth in manufacturing came from businesses with fewer than 20 employees, which represented only 7 percent of manufacturing employment. Manufacturers with fewer than 100 employees represented 19.7 percent of total manufacturing employment in 1976, but accounted for 81.4 percent of total manufacturing employment growth.

Employment Changes by Region and State

The dimensions of change differ significantly by region and by size class. Employment change in the economy can be aggregated within the SBDB by geographic area, industry, or sub-industry. Table A1.18 shows the changes by size class of business and Census region from 1976 to 1982. Total employment change by region, as

Table A1.18 *Job Generation by Census Region and Employment Size of Firm, 1976-1982 (Percent)*

Region	Employment Size of Firm						
	Total	0-19	20-99	<100	100-499	<500	500+
U.S. Total	15.6	29.3	13.1	22.0	10.7	18.9	12.2
New England	12.7	25.5	7.6	17.0	6.2	13.8	11.5
Middle Atlantic	4.3	19.9	2.5	11.9	-0.8	8.1	0.0
East North Central	6.5	17.4	4.6	11.4	4.3	9.4	3.9
West North Central	15.6	18.8	10.4	15.3	11.5	14.3	17.2
South Atlantic	17.6	33.8	16.1	25.7	12.8	22.0	12.8
East South Central	11.3	17.3	9.7	14.0	9.7	12.8	9.8
West South Central	34.6	44.8	32.9	39.5	25.3	35.7	33.4
Mountain	38.9	47.5	30.1	40.4	35.8	39.3	38.4
Pacific	26.4	48.4	22.5	36.6	21.0	32.6	19.4

Note: Regional changes for 1976-1978, 1978-1980, and 1980-1982 can be found in Appendix Table A1.22

New England	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
Middle Atlantic	New York, New Jersey, Pennsylvania
East North Central	Ohio, Indiana, Illinois, Michigan, Wisconsin
West North Central	Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South Atlantic	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
East South Central	Kentucky, Alabama, Tennessee, Mississippi
West South Central	Arkansas, Texas, Oklahoma, Louisiana
Mountain	Montana, Idaho, Colorado, New Mexico, Arizona, Utah, Nevada, Wyoming
Pacific	Washington, Oregon, California, Hawaii, Alaska

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

shown in the first column, exhibits a wide growth variance over the six-year period: from 4.3 percent in the Middle Atlantic states to 38.9 percent in the Mountain states. The three western regions of the country exhibited higher employment growth rates during the entire period. Growth was slowest in the Middle Atlantic and the East North Central states and was average in all other regions (Chart 1.5). In small enterprises with fewer than 20 employees, employment growth usually exceeds that in all other size categories. Table A1.18 also shows that employment change over the six-year period is positive in every region and size category, with the exception of employment in firms with 100 to 499 employees in the Middle Atlantic region. Employment in this category declined by only .8 percent from 1976 to 1982.

Table A1.19 States with the Largest and Smallest Employment Growth, 1976–1982 and Related Time Periods

State	1976–1982		1976–1978		1976–1978		1978–1980		1978–1980		1980–1982		1980–1982	
	Rank	1976–1982	Rank	1976–1978	Rank	1976–1978	Rank	1978–1980	Rank	1978–1980	Rank	1980–1982	Rank	1980–1982
Wyoming	62.5	1	36.1	1	13.9	3	4.9	8						
Utah	54.0	2	32.5	2	12.2	5	3.7	10						
New Mexico	46.5	3	31.2	4	12.0	6	– 3	28						
Arizona	41.4	4	15.2	9	14.7	1	7.0	4						
Nevada	41.1	5	15.5	7	14.6	2	6.7	5						
Delaware	3.2	47	2	50	1.8	45	1.3	20						
Indiana	3.2	48	8.2	34	9	49	–5.4	47						
West Virginia	2.9	49	7.1	39	–1.9	51	–2.0	38						
New York	2.3	50	1	51	7	50	1.5	14						
Rhode Island	2.1	51	2.2	48	2.5	43	–2.5	43						

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Employment change by state can be examined for several periods using the SBDB. For example, Table A1.19 shows the five fastest and slowest growing states from 1976 through 1982. Growth rates for the three two-year periods from 1976 to 1982 are also shown for the ten states. The two-year data portray whether change is uniform over time. New York State, for example, which was the second slowest growing state between 1976 and 1982, the slowest between 1976 and 1978, and the second slowest between 1978 and 1980, rebounded to nineteenth position between 1980 and 1982. Similarly, Delaware was among the slowest growing states in the six-year period and then jumped to the twentieth position for the 1980-1982 period. A full examination of the employment change data by state for each of the two-year periods should convince most analysts that it is difficult to draw any broad conclusions about employment growth rates over longer periods.²

Small business' capacity to create jobs appears to cross all industry lines and geographic boundaries. Using SBDB figures to analyze changes in the employment distribution by industry and geographic area is just one example of the data base's usefulness. Tables in the following section provide additional information to examine in greater depth the role that small businesses play in job generation in the American economy.

*Information
Tables from the
SBDB and Other
Sources*

The SBA's Office of Advocacy has a wide variety of available data for economic research. The USELM file data have been tabulated by size of firm for different geographic categories. Available geographic tabulations include state, SBA region, census region, and selected Metropolitan Statistical Area categories. Industrial analysis can be conducted using four-digit Standard Industrial Code (SIC) designations at the U.S. level. Also, two-digit SIC classification data are available at various regional and state levels. These aggregated USELM microdata provide the basis for extensive analysis of employment and establishment change between 1976 and 1982.

The basic table of establishment counts and absolute employment levels for major industry divisions within each state are found in Appendix Table A1.20, which includes data for 1976, 1978, 1980, and 1982.

Table A1.21 describes establishment and employment changes between 1976 and 1982, particularly percentage changes in establishment startups and expansions.

²Data are also available in the Small Business Data Base for employment changes over four-year periods, such as 1976 to 1980 or 1978 to 1982.

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982

State/Industry Division	1976		1978		1980		1982	
	Estab.	Emplov.	Estab.	Emplov.	Estab.	Emplov.	Estab.	Emplov.
U.S., Total	4,280,809	75,961,361	4,416,874	82,388,347	4,552,673	86,853,343	4,723,716	87,832,343
Agriculture	101,653	864,915	103,300	902,144	105,363	877,868	108,898	907,416
Mining	36,255	967,489	39,089	1,093,996	42,529	1,200,913	50,060	1,330,856
Construction	520,343	4,561,479	527,137	4,922,725	537,583	4,973,137	558,824	4,920,525
Manufacturing	432,555	21,913,912	444,935	23,334,212	460,564	24,497,093	461,295	23,084,244
Transportation	185,783	5,332,032	187,558	5,620,401	195,546	5,990,089	201,214	6,025,662
Wholesale Trade	474,493	4,986,723	498,773	5,430,275	513,188	5,714,067	530,210	5,743,414
Retail Trade	1,410,566	14,014,749	1,387,118	15,155,145	1,411,981	15,958,798	1,442,767	16,207,016
FIRE	298,061	5,364,377	335,643	5,740,456	348,336	5,955,801	361,535	6,400,003
Services	821,101	17,955,687	893,322	20,188,993	937,582	21,685,577	1,008,918	23,213,198
Alabama, Total	56,627	1,086,779	56,188	1,138,522	57,699	1,201,078	58,146	1,133,648
Agriculture	1,414	17,654	1,404	16,153	1,420	14,727	1,449	14,496
Mining	314	16,960	382	9,949	356	11,781	313	8,432
Construction	6,738	92,965	6,920	102,676	6,850	104,542	6,860	91,221
Manufacturing	5,153	361,631	5,210	390,961	5,567	414,029	5,404	365,263
Transportation	2,113	90,917	2,091	79,970	2,139	83,614	2,132	79,243
Wholesale Trade	6,304	69,026	6,503	73,820	6,787	75,336	6,842	75,101
Retail Trade	23,418	200,351	21,762	208,330	22,193	213,614	22,164	213,986
FIRE	2,693	43,818	3,055	47,942	3,119	50,133	3,102	51,010
Services	8,482	193,458	8,861	208,723	9,268	233,302	9,874	257,890

Table A1.20 *Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982*
Continued

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.
Alaska, Total	8,713	110,061	9,558	111,304	10,021	125,852	11,162	154,111
Agriculture	76	398	102	556	108	894	121	5,611
Mining	121	3,239	124	3,223	134	3,093	174	16,611
Construction	1,722	17,114	1,761	15,051	1,894	13,722	2,212	12,411
Manufacturing	457	8,204	484	9,707	489	12,272	507	22,811
Transportation	854	23,569	861	21,805	928	21,384	1,021	8,811
Wholesale Trade	687	6,002	779	5,552	800	6,045	880	32,311
Retail Trade	2,708	23,729	3,023	26,871	3,128	27,770	3,333	11,911
FIRE	537	5,481	607	6,629	626	6,726	715	42,911
Services	1,550	22,326	1,817	21,909	1,915	33,947	2,201	855,211
Arizona, Total	40,813	605,126	45,954	697,301	48,113	799,511	52,642	855,211
Agriculture	1,189	14,098	1,246	14,200	1,253	12,936	1,332	14,211
Mining	195	21,868	189	23,032	207	28,189	231	28,611
Construction	6,092	52,677	7,113	64,124	7,476	74,262	8,166	73,911
Manufacturing	3,158	107,320	3,572	129,211	3,882	151,705	4,211	144,711
Transportation	1,281	30,520	1,353	34,870	1,423	38,942	1,594	41,931
Wholesale Trade	3,793	35,115	4,145	40,751	4,300	46,162	4,756	49,671
Retail Trade	13,070	140,773	14,250	158,605	14,808	177,211	15,827	193,561
FIRE	3,148	43,152	3,739	51,854	3,922	57,535	4,311	66,471
Services	8,886	159,602	10,347	180,653	10,840	212,568	12,213	242,001
Arkansas, Total	45,546	668,122	46,976	746,799	47,934	788,193	48,927	771,581
Agriculture	2,373	17,564	2,515	18,406	2,533	17,841	2,555	18,261
Mining	322	5,013	325	5,988	328	5,750	365	6,171
Construction	4,949	38,776	5,080	42,769	5,137	43,928	5,215	39,661

Manufacturing	3,428	242,426	3,589	271,005	3,691	277,068	3,690	261,134
Transportation	1,739	50,856	1,858	54,327	1,923	70,732	1,998	65,823
Wholesale Trade	4,710	42,609	4,971	45,163	5,083	44,890	5,192	45,739
Retail Trade	18,363	134,905	18,156	147,738	18,235	154,198	18,464	150,309
FIRE	2,421	24,643	2,667	27,185	2,754	27,495	2,827	30,398
Services	7,240	111,330	7,815	134,219	8,249	146,291	8,622	154,065
California, Total	427,860	7,316,768	467,456	8,236,209	491,281	8,968,166	516,740	9,367,519
Agriculture	12,826	179,059	13,049	186,524	13,266	185,307	13,663	190,739
Mining	1,514	49,252	1,567	50,121	1,652	57,384	1,935	68,652
Construction	40,707	376,486	44,282	427,882	46,772	486,775	49,502	498,362
Manufacturing	55,023	1,960,236	59,515	2,210,792	62,758	2,433,239	63,533	2,379,907
Transportation	18,700	498,802	19,391	543,309	20,412	567,251	20,978	592,343
Wholesale Trade	41,960	463,253	46,296	535,521	48,771	578,551	51,932	607,643
Retail Trade	128,112	1,362,175	133,143	1,488,848	137,310	1,619,765	141,160	1,662,105
FIRE	30,402	565,370	37,467	626,088	40,517	687,074	43,130	764,593
Services	98,616	1,862,135	112,745	2,167,124	119,823	2,352,819	130,907	2,603,175
Colorado, Total	58,781	1,020,102	63,538	1,158,805	67,477	1,268,125	73,734	1,352,991
Agriculture	1,649	12,526	1,636	13,605	1,680	12,626	1,787	13,971
Mining	1,378	27,468	1,564	35,420	1,850	43,703	2,485	57,139
Construction	7,381	61,014	7,880	75,637	8,419	83,264	9,557	91,183
Manufacturing	4,828	197,377	5,342	194,794	5,731	216,751	5,986	212,502
Transportation	2,321	66,792	2,408	77,854	2,541	98,608	2,727	110,980
Wholesale Trade	5,837	58,312	6,384	67,575	6,811	73,344	7,386	79,535
Retail Trade	18,632	186,277	19,155	219,037	19,754	229,633	20,655	247,629
FIRE	4,408	63,871	5,516	90,224	5,967	104,336	6,534	117,228
Services	12,347	346,465	13,652	384,661	14,725	405,860	16,619	421,924

Table A-20. Employment by State and Industry Division, 1976, 1978, 1980, 1982

Industry Division	1976		1978		1980		1982	
	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.
Connecticut, Total	65,750	1,271,199	66,576	1,426,665	68,027	1,485,883	69,641	1,464,000
Agriculture	986	7,832	958	9,404	972	8,320	974	9.5
Mining	90	2,788	91	2,690	83	2,157	87	2.0
Construction	8,402	60,569	7,803	59,755	7,639	55,144	7,753	56.1
Manufacturing	8,365	474,871	8,547	506,871	8,853	524,287	8,761	479.3
Transportation	2,473	52,848	2,500	65,188	2,585	73,812	2,664	70.5
Wholesale Trade	5,828	70,645	6,049	81,052	6,230	83,168	6,382	86.5
Retail Trade	22,479	220,510	21,830	232,814	22,108	241,569	22,313	241.9
FIRE	4,339	146,892	4,881	178,455	4,971	183,666	5,157	186.2
Services	12,787	234,244	13,918	290,436	14,586	313,760	15,551	331.6
Delaware, Total	9,660	170,415	9,792	170,739	9,941	173,647	10,467	175,700
Agriculture	216	1,731	216	1,732	218	2,533	237	2.8
Mining	21	88	19	101	17	72	16	1.0
Construction	1,445	13,560	1,406	15,541	1,406	12,834	1,472	14.8
Manufacturing	720	46,124	749	44,475	768	43,312	752	41.9
Transportation	407	8,784	420	9,301	435	9,053	432	7.0
Wholesale Trade	786	10,440	827	10,319	832	10,149	877	10.0
Retail Trade	3,659	37,177	3,553	36,196	3,578	37,261	3,712	38.8
FIRE	723	11,719	781	10,128	809	10,569	832	11.3
Services	1,681	40,792	1,822	42,947	1,878	47,865	2,135	48.7
D.C., Total	15,126	414,417	16,324	483,889	17,204	509,417	17,695	498,000
Agriculture	31	228	29	262	27	222	25	2.5
Mining	13	322	15	424	13	311	21	2.1
Construction	1,176	17,174	1,177	17,174	1,177	17,174	1,177	17.1

Manufacturing	670	17,809	537	17,621	779	19,150	716	16,787
Transportation	547	56,819	578	72,618	619	53,207	667	38,080
Wholesale Trade	757	11,068	781	10,502	796	11,856	772	10,441
Retail Trade	3,477	67,300	3,523	85,212	3,621	72,875	3,695	73,556
FIRE	7,800	52,897	1,985	56,780	2,100	63,480	2,111	56,879
Services	6,654	196,559	7,549	220,444	8,107	211,714	8,505	223,570
Florida, Total	183,587	2,769,265	199,719	3,079,751	212,059	3,394,156	229,266	3,584,010
Agriculture	3,565	72,539	5,830	83,013	6,054	77,180	6,279	81,636
Mining	292	12,117	297	13,376	305	17,435	340	16,159
Construction	24,786	224,828	26,015	245,965	27,214	278,412	30,143	323,963
Manufacturing	14,824	447,495	16,060	499,087	17,129	563,539	17,864	549,626
Transportation	6,964	242,244	7,238	240,380	7,635	248,639	8,151	241,644
Wholesale Trade	18,267	178,828	20,867	202,465	22,503	219,277	24,917	241,661
Retail Trade	56,908	573,233	59,884	651,624	63,674	730,874	68,063	762,058
FIRE	15,736	288,643	18,265	329,844	19,358	351,364	20,725	362,026
Services	40,244	729,537	45,233	813,998	48,185	902,436	52,784	1,005,237
Georgia, Total	102,678	1,880,885	103,426	2,030,151	106,096	2,146,116	111,083	2,200,007
Agriculture	2,751	21,767	2,749	23,119	2,809	22,540	2,924	24,312
Mining	249	9,592	250	10,457	273	10,818	288	11,059
Construction	14,655	119,396	12,852	119,937	12,685	123,048	13,193	124,409
Manufacturing	9,146	596,516	9,644	633,754	10,089	667,141	10,099	648,078
Transportation	3,672	112,149	3,681	123,798	3,835	137,489	4,070	150,386
Wholesale Trade	12,261	140,254	13,147	154,645	13,573	166,311	14,090	166,662
Retail Trade	33,244	339,482	32,429	390,024	32,820	407,773	34,036	413,925
FIRE	8,348	136,587	8,627	128,993	8,836	136,826	9,014	140,762
Services	18,352	405,141	20,048	445,423	21,176	474,170	23,369	520,392

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982
(Continued)

State Industry Division	1976		1978		1980		1982	
	Estab	Employ	Estab	Employ	Estab	Employ	Estab	Employ
Hawaii, Total	17,228	328,516	18,673	365,491	19,295	399,342	20,102	401,211
Agriculture	488	19,895	517	19,917	532	23,847	536	15,694
Mining	11	665	10	623	11	1,162	16	94
Construction	2,392	32,456	2,526	29,790	2,560	30,401	2,588	27,618
Manufacturing	978	21,448	971	21,559	971	22,721	1,011	22,618
Transportation	918	37,367	1,036	41,367	1,079	43,383	1,102	54,812
Wholesale Trade	1,814	18,363	2,026	19,863	2,083	21,272	2,152	21,112
Retail Trade	5,033	68,415	5,358	78,634	5,471	90,886	5,740	88,612
FIRE	1,935	35,732	2,161	44,469	2,313	47,291	2,414	51,000
Services	3,659	94,174	4,068	109,270	4,274	118,381	4,544	118,772
Idaho, Total	17,276	198,605	18,672	249,605	19,277	266,630	20,253	264,814
Agriculture	838	6,475	897	10,047	884	6,624	880	7,472
Mining	84	9,277	82	8,985	96	8,799	107	6,200
Construction	2,429	14,698	2,786	17,507	2,837	18,995	2,882	19,004
Manufacturing	1,413	39,520	1,507	59,967	1,595	66,645	1,633	61,600
Transportation	731	11,485	747	13,542	800	13,387	876	14,700
Wholesale Trade	2,249	20,253	2,458	21,200	2,487	25,543	2,596	25,611
Retail Trade	6,495	52,621	6,704	62,127	6,820	62,598	7,075	62,950
FIRE	519	6,340	690	7,731	737	8,258	849	9,200
Services	2,518	37,936	2,802	48,498	3,022	55,782	3,355	58,044
Illinois, Total	231,477	4,869,203	235,298	5,067,934	239,498	5,257,053	245,054	5,131,002
Agriculture	3,980	25,648	4,195	29,300	4,193	28,394	4,322	25,570
Mining	1,198	31,158	1,244	31,629	1,213	31,716	1,451	32,314
Construction	25,217	129,431	27,011	141,185	27,112	142,211	27,153	141,114

Manufacturing	27,434	1,571,113	27,751	1,599,573	28,193	1,647,401	27,776	1,499,222
Transportation	11,105	359,482	11,238	382,638	11,682	395,317	11,781	394,228
Wholesale Trade	28,238	305,689	28,784	314,652	29,201	321,015	29,521	318,822
Retail Trade	70,267	822,866	67,861	838,894	67,862	867,286	69,051	855,981
FIRE	14,996	370,003	15,900	375,075	16,352	389,328	16,639	411,466
Services	48,019	1,154,838	51,121	1,249,825	52,870	1,337,530	56,155	1,381,638
Indiana, Total	92,467	1,957,302	92,825	2,118,448	94,484	2,134,646	95,569	2,019,548
Agriculture	2,539	15,535	2,612	15,290	2,661	15,922	2,700	15,727
Mining	572	10,847	618	11,068	665	12,976	708	13,007
Construction	11,867	93,324	11,755	103,960	11,867	100,568	11,876	89,924
Manufacturing	9,865	743,941	10,120	824,915	10,386	809,093	10,275	718,497
Transportation	3,562	136,653	3,622	142,103	3,817	145,406	3,853	143,727
Wholesale Trade	11,229	117,304	11,607	126,553	11,751	127,855	11,703	119,345
Retail Trade	32,568	343,951	31,292	393,974	31,380	402,911	31,360	380,987
FIRE	5,452	92,383	5,863	98,357	6,033	101,433	6,086	106,554
Services	14,815	403,364	15,336	402,229	15,925	418,482	17,009	431,780
Iowa, Total	62,254	949,689	60,763	993,847	61,534	1,015,983	61,969	989,376
Agriculture	2,205	16,061	2,257	12,286	2,290	11,562	2,319	12,401
Mining	210	2,194	196	2,477	195	2,596	190	2,604
Construction	7,746	56,011	7,682	61,982	7,697	56,310	7,681	47,289
Manufacturing	4,522	264,828	4,470	287,786	4,631	294,142	4,440	274,481
Transportation	3,280	55,227	3,010	64,283	3,054	69,084	3,121	70,676
Wholesale Trade	8,926	74,130	8,981	79,255	8,972	80,009	8,847	77,084
Retail Trade	24,658	220,813	23,126	214,665	23,166	220,095	23,141	217,167
FIRE	2,216	36,270	2,478	45,010	2,566	46,211	2,679	44,267
Services	8,491	224,155	8,563	226,103	8,964	235,973	9,550	243,406

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—
Continued

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ	Estab.	Employ.	Estab.	Employ	Estab.	Employ
Kansas, Total	54,575	730,205	56,409	836,236	58,201	893,748	59,936	891,891
Agriculture	1,915	10,285	1,992	11,000	2,074	11,383	2,151	11,646
Mining	1,416	14,892	1,555	17,938	1,719	19,833	2,106	23,431
Construction	6,778	49,969	7,332	58,721	7,518	55,656	7,752	55,174
Manufacturing	4,203	203,723	4,336	225,077	4,487	241,211	4,428	218,237
Transportation	2,989	68,511	2,980	80,101	3,064	87,821	3,075	82,593
Wholesale Trade	6,950	60,971	7,270	67,538	7,404	70,512	7,514	70,005
Retail Trade	18,781	150,811	18,084	162,027	18,251	180,212	18,357	180,690
FIRE	2,921	37,335	3,360	43,198	3,563	43,521	3,677	46,494
Services	8,623	133,707	9,500	170,633	10,122	183,599	10,875	203,621
Kentucky, Total	60,152	1,035,380	60,924	1,120,617	62,384	1,175,755	64,277	1,143,111
Agriculture	930	5,874	992	6,786	1,039	6,847	1,107	7,675
Mining	1,983	52,313	2,025	59,252	1,953	67,429	2,131	69,258
Construction	7,357	59,576	7,593	67,803	7,678	65,152	7,835	57,444
Manufacturing	4,060	301,123	4,135	340,993	4,291	355,696	4,287	318,732
Transportation	2,713	114,145	2,719	87,373	2,808	73,092	2,949	74,004
Wholesale Trade	6,594	61,464	6,887	67,500	7,012	68,892	7,122	67,605
Retail Trade	24,314	204,556	23,371	231,115	23,678	257,999	23,866	253,328
FIRE	3,568	43,625	3,932	43,267	4,027	43,358	4,151	44,320
Services	8,633	192,704	9,269	216,528	9,898	237,289	10,828	250,745
Louisiana, Total	69,494	1,149,550	73,457	1,311,610	77,354	1,443,737	81,598	1,481,226
Agriculture	1,479	12,050	1,499	11,744	1,518	14,121	1,559	11,921
Mining	2,024	64,390	2,106	69,690	2,344	84,284	2,785	92,232
Construction	9,493	111,193	9,749	140,578	10,024	148,724	10,643	144,915

Manufacturing	4,217	206,145	4,415	231,236	4,738	243,652	4,661	223,051
Transportation	4,161	101,560	4,271	118,444	4,556	134,365	4,809	141,682
Wholesale Trade	7,923	84,770	8,601	96,492	8,997	114,521	9,593	106,945
Retail Trade	22,774	227,792	22,921	247,538	23,940	262,919	24,932	271,362
FIRE	5,164	69,321	5,882	74,512	6,155	80,145	6,248	88,008
Services	12,259	272,328	14,012	321,376	15,081	361,007	16,369	401,111
Maine, Total	23,128	359,114	22,928	393,336	23,717	406,898	23,686	396,227
Agriculture	648	7,994	600	6,556	600	6,591	605	3,977
Mining	13	267	16	313	18	344	15	95
Construction	2,870	21,240	2,780	21,822	2,859	19,625	2,890	18,930
Manufacturing	1,843	130,856	1,876	137,323	1,933	142,512	1,861	130,372
Transportation	1,123	15,129	1,112	17,053	1,169	18,493	1,145	17,224
Wholesale Trade	2,047	22,476	2,031	23,285	2,055	23,664	2,070	22,850
Retail Trade	9,045	72,073	8,754	76,528	8,986	85,755	8,943	85,226
FIRE	1,402	17,457	1,517	20,616	1,367	20,245	1,543	20,217
Services	4,137	71,622	4,241	89,840	4,531	89,669	4,614	97,337
Maryland, Total	65,677	1,244,221	70,225	1,376,929	73,216	1,433,874	76,144	1,458,439
Agriculture	1,209	9,866	1,229	10,680	1,243	9,571	1,300	10,190
Mining	174	2,437	184	2,831	210	3,054	182	2,851
Construction	10,819	128,990	11,804	139,032	12,175	134,725	12,573	127,999
Manufacturing	4,828	289,393	5,018	288,690	5,239	305,917	5,263	292,534
Transportation	2,891	80,567	2,994	90,116	3,071	90,058	3,167	99,296
Wholesale Trade	5,474	66,519	5,753	72,417	5,932	74,822	6,097	76,385
Retail Trade	19,913	230,305	19,995	252,628	20,836	263,961	21,278	268,497
FIRE	6,322	98,115	7,427	114,461	7,737	111,187	7,912	119,900
Services	13,538	338,029	15,820	406,072	16,973	440,578	18,372	460,766

Table A1.20 *Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—Continued*

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ	Estab.	Employ	Estab.	Employ	Estab.	Employ
Massachusetts, Total	119,565	2,458,260	116,712	2,584,802	117,949	2,674,988	120,306	2,751,793
Agriculture	1,930	12,626	1,833	12,927	1,817	11,750	1,856	12,535
Mining	156	2,118	146	2,384	145	2,299	153	2,253
Construction	13,510	105,510	11,909	96,188	11,723	98,654	12,008	102,908
Manufacturing	14,696	802,353	14,681	826,188	14,952	856,900	14,672	814,488
Transportation	5,397	127,532	5,136	134,286	5,147	140,421	5,113	148,232
Wholesale Trade	11,788	140,914	11,766	145,644	11,789	139,526	11,958	141,380
Retail Trade	39,026	441,911	36,592	454,549	36,875	468,188	37,374	476,466
FIRE	8,677	208,475	9,151	213,564	9,162	216,425	9,547	253,253
Services	24,383	616,821	25,499	699,072	26,339	740,825	27,624	800,278
Michigan, Total	159,647	2,913,955	162,617	3,157,035	164,837	3,189,079	166,362	3,130,393
Agriculture	3,186	20,342	3,287	21,374	3,335	18,471	3,455	19,138
Mining	658	14,323	654	16,107	689	16,712	731	14,412
Construction	20,814	153,255	20,078	165,828	20,010	150,704	19,978	127,617
Manufacturing	20,067	1,038,631	20,645	1,123,715	21,128	1,131,695	20,682	1,040,378
Transportation	5,803	170,089	5,899	196,791	6,037	190,334	5,974	188,418
Wholesale Trade	16,285	166,939	16,975	180,531	17,133	186,334	17,383	179,804
Retail Trade	52,908	519,120	51,386	553,723	51,742	573,539	51,893	610,009
FIRE	9,589	185,352	10,766	168,701	10,956	164,639	11,044	169,333
Services	30,337	645,904	32,929	730,265	33,807	756,652	35,222	781,283
Minnesota, Total	84,633	1,311,071	88,385	1,432,342	90,808	1,532,795	92,633	1,565,283
Agriculture	2,367	12,342	2,512	13,503	2,565	12,972	2,609	13,609
Mining	291	13,692	280	17,935	288	17,434	280	16,074
Construction	10,933	87,009	11,605	99,149	11,996	98,865	12,076	92,507

Manufacturing	8,408	348,377	8,616	356,432	8,850	384,088	8,968	385,396
Transportation	3,609	76,481	3,592	74,633	3,699	89,326	3,804	94,947
Wholesale Trade	10,671	108,893	10,995	112,680	11,169	122,310	11,207	116,276
Retail Trade	28,439	284,307	28,450	320,105	28,836	337,994	28,953	341,683
FIRE	5,476	81,726	6,297	91,934	6,462	93,286	6,627	102,721
Services	14,438	298,243	16,038	345,971	16,944	376,520	18,109	401,869
Mississippi, Total	40,003	648,633	38,692	711,914	39,464	736,184	40,335	727,301
Agriculture	1,743	19,649	1,643	17,264	1,665	17,119	1,662	13,336
Mining	417	5,551	442	7,140	479	8,684	574	10,388
Construction	4,327	49,859	3,966	50,152	3,897	44,649	3,941	51,656
Manufacturing	3,099	257,805	3,172	285,587	3,272	284,350	3,167	261,011
Transportation	1,681	27,748	1,557	31,826	1,615	32,729	1,620	35,163
Wholesale Trade	4,190	38,164	4,342	42,228	4,411	44,321	4,454	43,456
Retail Trade	17,177	117,553	15,662	124,807	15,838	129,507	16,062	129,664
FIRE	1,815	20,939	2,234	25,347	2,346	27,274	2,426	28,727
Services	5,553	111,365	5,673	127,563	5,942	147,551	6,428	153,900
Missouri, Total	103,213	1,707,613	105,927	1,886,834	109,159	1,983,964	111,556	1,968,529
Agriculture	2,415	13,461	2,454	14,156	2,536	14,082	2,622	14,766
Mining	445	11,484	453	12,896	487	13,716	506	11,714
Construction	11,980	98,214	12,295	107,746	12,630	101,100	12,955	96,267
Manufacturing	9,244	471,477	9,465	511,132	9,820	548,260	9,668	502,287
Transportation	4,767	131,631	4,804	141,778	4,989	146,308	5,087	150,034
Wholesale Trade	13,249	128,417	13,632	140,832	13,948	146,332	14,075	141,649
Retail Trade	34,532	342,733	33,446	369,522	34,003	395,318	34,226	401,365
FIRE	7,661	120,810	8,664	136,447	8,942	129,503	9,138	134,224
Services	18,919	389,386	20,715	462,335	21,804	489,345	23,281	516,222

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—
Continued

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.
Montana, Total	18,318	195,419	19,368	223,525	20,063	243,921	20,988	229,145
Agriculture	571	2,821	595	2,827	620	3,759	636	3,744
Mining	264	8,657	324	7,001	388	11,849	474	9,535
Construction	2,212	13,188	2,482	16,339	2,575	14,561	2,611	14,995
Manufacturing	1,206	28,549	1,207	38,777	1,246	39,232	1,321	23,494
Transportation	1,028	16,772	985	17,370	1,034	18,997	1,135	20,409
Wholesale Trade	2,263	19,073	2,361	17,765	2,392	18,531	2,419	18,669
Retail Trade	7,421	58,000	7,605	63,462	7,754	65,073	7,890	66,606
FIRE	724	6,240	850	8,484	927	8,306	1,036	9,698
Services	2,629	42,120	2,958	51,501	3,128	63,613	3,466	61,994
Nebraska, Total	37,640	544,917	37,846	605,052	38,990	622,071	39,991	627,470
Agriculture	2,181	11,349	2,257	12,037	2,317	12,539	2,353	13,513
Mining	266	2,265	273	2,711	276	3,003	292	3,148
Construction	4,754	41,701	4,946	45,549	5,089	45,069	5,228	40,521
Manufacturing	2,375	107,139	2,423	115,087	2,492	122,035	2,436	113,393
Transportation	1,735	54,260	1,743	60,592	1,849	57,037	1,916	63,657
Wholesale Trade	5,291	46,185	5,381	48,828	5,461	51,235	5,466	50,718
Retail Trade	13,509	126,836	12,814	129,971	13,022	134,847	13,226	131,586
FIRE	1,841	34,596	2,016	35,110	2,110	39,627	2,190	44,551
Services	5,687	120,586	5,994	155,168	6,375	156,679	6,883	166,382
Nevada, Total	11,857	267,413	13,841	308,708	15,131	353,634	16,111	377,182
Agriculture	225	1,624	232	1,836	252	1,707	276	1,997
Mining	132	6,482	129	4,447	179	5,551	200	6,819
Construction	1,820	22,156	2,274	23,123	2,511	25,455	2,654	25,120

Manufacturing	715	16,601	831	22,063	907	27,699	909	25,385
Transportation	498	22,067	530	25,571	584	28,375	613	29,821
Wholesale Trade	1,057	9,604	1,235	11,502	1,329	13,571	1,401	14,077
Retail Trade	4,103	38,363	4,578	48,274	4,842	54,653	4,978	61,072
FIRE	670	9,663	843	11,611	1,028	13,745	1,127	11,836
Services	2,636	140,853	3,189	160,369	3,476	183,059	3,924	200,995
New Hampshire, Total	18,293	297,310	18,457	338,749	19,202	355,048	19,623	365,008
Agriculture	257	2,162	237	2,057	243	1,724	255	2,180
Mining	17	100	15	114	18	147	17	141
Construction	2,299	14,732	2,190	15,857	2,186	18,870	2,293	21,711
Manufacturing	2,009	116,362	2,118	136,753	2,249	144,734	2,198	137,220
Transportation	668	12,708	675	12,390	716	15,137	739	13,535
Wholesale Trade	1,458	13,413	1,545	15,331	1,648	16,552	1,682	16,758
Retail Trade	7,229	65,113	7,133	73,273	7,313	73,123	7,372	80,485
FIRE	977	16,840	1,085	19,350	1,156	19,217	1,207	19,302
Services	3,379	55,882	3,460	63,625	3,672	65,544	3,859	73,676
New Jersey, Total	157,791	2,825,000	156,463	2,921,085	160,717	3,077,579	164,356	3,071,414
Agriculture	2,274	13,339	2,158	12,593	2,177	11,681	2,279	12,775
Mining	199	4,238	194	3,327	202	3,480	219	2,827
Construction	17,991	123,776	16,572	119,401	16,933	121,229	17,574	125,465
Manufacturing	20,038	917,176	19,704	910,752	20,159	941,389	19,558	873,051
Transportation	8,571	221,195	8,570	234,269	9,081	249,371	9,099	244,740
Wholesale Trade	16,161	210,969	16,524	223,101	17,013	234,802	17,638	251,936
Retail Trade	51,608	505,269	48,873	521,116	49,481	535,602	49,860	545,176
FIRE	11,406	175,545	12,927	197,174	13,365	202,576	13,601	218,512
Services	29,543	653,492	30,941	699,352	32,305	777,449	34,527	816,912

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—Continued

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ	Estab.	Employ	Estab.	Employ	Estab.	Employ
New Mexico, Total	20,844	301,563	22,281	395,470	23,383	442,976	24,614	441,683
Agriculture	424	4,212	450	4,721	464	5,036	491	5,201
Mining	656	25,456	714	31,603	778	33,998	860	29,620
Construction	2,662	29,767	2,957	35,760	3,097	39,527	3,332	36,470
Manufacturing	1,335	33,765	1,388	39,060	1,444	41,715	1,485	38,647
Transportation	834	19,230	863	21,715	907	24,112	929	26,458
Wholesale Trade	2,235	18,960	2,416	22,747	2,482	24,553	2,601	23,803
Retail Trade	7,586	66,583	7,694	77,177	7,868	88,214	8,060	86,316
FIRE	1,103	12,636	1,315	16,582	1,437	18,359	1,492	20,237
Services	4,008	90,953	4,485	146,104	4,906	167,463	5,364	174,931
New York, Total	388,901	6,883,775	390,131	6,892,528	394,078	6,938,308	400,996	7,044,457
Agriculture	5,393	30,337	5,281	30,488	5,355	30,514	5,473	31,605
Mining	607	18,625	658	15,380	692	13,969	749	15,772
Construction	32,973	282,695	31,175	257,084	31,153	252,633	32,133	262,360
Manufacturing	46,358	1,736,858	44,903	1,712,141	44,481	1,709,112	44,038	1,644,647
Transportation	16,818	415,499	16,772	428,546	17,044	439,641	17,027	418,138
Wholesale Trade	51,462	538,837	52,388	563,844	52,548	571,883	52,706	558,009
Retail Trade	120,022	1,075,724	117,448	1,091,772	118,326	1,075,683	120,304	1,102,113
FIRE	31,202	731,679	33,228	698,247	33,586	703,661	34,178	767,548
Services	84,065	2,053,520	88,279	2,095,026	90,894	2,141,212	94,387	2,244,265
North Carolina, Total	92,299	1,783,912	94,152	1,920,487	96,577	2,015,718	98,516	2,001,895
Agriculture	1,982	17,194	2,026	18,563	2,040	16,733	2,112	18,523
Mining	139	4,088	142	4,372	152	5,531	140	5,381
Construction	12,478	137,279	11,897	131,110	11,979	131,478	12,220	121,818

Manufacturing	10,015	725,111	10,472	781,915	10,904	820,304	10,815	799,947
Transportation	3,170	90,721	3,152	91,968	3,291	104,617	3,351	95,873
Wholesale Trade	10,761	116,644	11,491	123,920	11,823	127,438	11,975	127,179
Retail Trade	34,641	283,279	33,747	305,269	34,031	316,052	34,377	308,711
FIRE	5,085	101,362	6,124	96,725	6,474	102,706	6,677	108,564
Services	14,028	308,234	15,101	366,645	15,884	390,860	16,848	415,899
North Dakota, Total	14,617	169,009	14,842	194,869	15,421	203,430	15,757	207,408
Agriculture	661	2,316	667	2,549	667	2,540	694	3,190
Mining	173	1,902	203	3,260	256	5,524	356	7,583
Construction	1,892	14,117	1,990	15,561	2,081	15,588	2,121	14,216
Manufacturing	663	19,105	664	18,490	700	18,768	706	18,275
Transportation	644	8,773	638	9,296	645	10,616	708	11,563
Wholesale Trade	2,431	18,692	2,428	19,547	2,542	21,183	2,516	20,713
Retail Trade	5,904	51,508	5,722	54,298	5,851	58,930	5,806	57,467
FIRE	427	5,899	576	7,194	620	7,169	643	6,723
Services	1,823	46,696	1,954	64,676	2,059	63,111	2,207	67,677
Ohio, Total	194,407	4,023,710	198,396	4,296,002	202,570	4,369,121	207,575	4,224,218
Agriculture	4,373	25,209	4,485	26,604	4,565	24,841	4,702	26,922
Mining	1,495	38,048	1,583	62,512	1,670	57,416	1,900	66,099
Construction	29,369	214,011	29,480	223,396	29,615	215,378	29,764	196,355
Manufacturing	21,933	1,502,160	22,501	1,538,527	23,218	1,577,943	23,061	1,424,660
Transportation	7,982	295,444	8,185	308,348	8,535	288,182	8,737	273,780
Wholesale Trade	20,940	238,699	21,916	260,329	22,426	268,106	22,857	255,962
Retail Trade	56,002	711,292	53,838	771,319	54,148	800,364	55,008	761,706
FIRE	14,274	222,206	15,624	234,624	15,871	234,983	16,206	244,327
Services	38,041	776,641	40,783	870,342	42,520	901,908	45,339	974,409

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—Continued

State/Industry Division	1976		1978		1980		1982	
	Estab	Employ.	Estab	Employ	Estab	Employ	Estab	Employ.
Oklahoma, Total	60,413	866,464	63,766	995,541	67,132	1,089,934	72,447	1,173,202
Agriculture	1,320	8,007	1,394	8,853	1,443	9,034	1,481	9,056
Mining	2,960	55,295	3,401	53,381	4,136	74,227	5,422	99,726
Construction	7,012	62,620	7,979	70,692	8,283	71,422	8,971	76,104
Manufacturing	4,758	196,539	5,008	230,014	5,309	246,895	5,505	249,502
Transportation	2,409	56,954	2,469	60,700	2,653	65,307	2,960	73,888
Wholesale Trade	7,171	62,756	7,655	68,202	8,033	76,106	8,637	83,800
Retail Trade	21,362	190,058	20,977	221,236	21,278	232,542	21,984	243,956
FIRE	3,921	54,265	4,403	62,741	4,648	62,354	5,036	68,049
Services	9,501	179,971	10,480	219,721	11,349	252,048	12,451	269,121
Oregon, Total	54,105	781,447	57,780	906,562	59,788	958,591	61,897	933,449
Agriculture	1,951	16,054	2,086	18,889	2,140	19,173	2,254	19,695
Mining	174	1,369	196	2,096	196	3,045	221	3,206
Construction	7,903	50,244	8,420	56,271	8,679	54,206	9,054	45,695
Manufacturing	6,362	191,957	6,642	222,177	6,861	226,121	6,881	210,314
Transportation	2,802	87,085	2,712	97,936	2,821	111,956	2,977	112,733
Wholesale Trade	5,990	60,211	6,514	66,189	6,720	69,030	6,817	65,734
Retail Trade	17,346	174,447	17,937	194,877	18,366	205,039	18,638	201,222
FIRE	2,832	42,399	3,439	54,438	3,583	58,410	3,773	62,755
Services	8,745	137,680	9,833	193,688	10,422	211,611	11,283	212,094
Pennsylvania, Total	226,145	4,521,526	221,580	4,656,960	223,698	4,730,329	226,213	4,723,727
Agriculture	3,859	35,544	3,598	28,318	3,688	25,304	3,850	28,604
Mining	1,730	71,357	1,854	75,872	1,880	68,232	1,911	61,663
Construction	29,468	248,891	28,403	252,604	28,333	240,676	28,667	237,905

Manufacturing	23,703	1,584,593	23,172	1,616,329	23,624	1,624,584	23,065	1,524,7
Transportation	9,650	247,071	9,527	259,379	9,818	283,926	9,676	279,4
Wholesale Trade	23,065	250,971	23,121	261,376	23,321	266,076	23,337	259,8
Retail Trade	75,804	770,484	70,357	785,443	70,192	802,117	70,545	805,8
FIRE	16,535	287,284	17,622	298,695	17,816	282,007	17,858	309,2
Services	42,331	1,025,331	43,927	1,078,942	45,026	1,137,408	47,304	1,216,3
Rhode Island, Total	19,899	390,432	19,913	398,941	20,167	408,919	20,466	398,4
Agriculture	300	2,027	294	2,038	306	1,826	300	1,6
Mining	12	77	22	171	22	178	21	1
Construction	2,295	16,919	2,062	17,282	2,036	15,182	2,070	15,6
Manufacturing	3,346	167,406	3,414	166,822	3,464	175,654	3,369	157,0
Transportation	851	13,940	846	14,705	868	15,410	857	13,5
Wholesale Trade	1,815	20,345	1,856	21,507	1,859	22,062	1,870	20,1
Retail Trade	6,062	52,761	5,847	54,204	5,853	55,296	5,897	55,9
FIRE	1,608	36,230	1,686	29,726	1,717	25,611	1,789	26,6
Services	3,611	80,727	3,885	92,487	4,041	97,700	4,294	107,6
South Carolina, Total	48,575	985,630	48,798	1,055,441	50,389	1,101,293	51,952	1,094,9
Agriculture	1,199	8,784	1,213	12,254	1,185	9,904	1,250	12,1
Mining	59	1,782	68	2,104	71	2,384	70	2,1
Construction	6,305	69,867	5,711	70,286	5,789	69,586	5,945	68,2
Manufacturing	3,834	403,067	3,938	424,969	4,237	449,356	4,274	428,4
Transportation	1,731	45,136	1,740	38,099	1,844	43,208	1,880	45,4
Wholesale Trade	5,274	53,462	5,475	58,264	5,678	60,682	5,928	62,5
Retail Trade	19,239	175,038	18,796	191,373	19,132	199,725	19,336	196,3
FIRE	3,006	43,205	3,443	45,992	3,561	47,393	3,723	49,5
Services	7,928	185,290	8,413	212,100	8,893	219,057	9,547	230,0

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982, 1986, 1978, 1980, 1982, 1986

Continued

State/Industry Division	1976		1978		1980		1982	
	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.	Estab.	Employ.
South Dakota, Total	15,157	170,961	14,886	193,247	15,378	210,373	15,920	205,939
Agriculture	701	4,471	703	4,535	730	4,891	764	5,141
Mining	68	3,857	72	4,531	66	4,507	73	4,646
Construction	1,705	10,672	1,739	11,669	1,786	11,778	1,820	10,040
Manufacturing	870	23,370	886	26,180	934	28,824	962	28,141
Transportation	789	10,451	720	13,960	750	15,368	783	13,241
Wholesale Trade	2,204	17,034	2,175	17,108	2,224	17,873	2,224	17,241
Retail Trade	6,347	48,807	5,944	51,395	6,073	54,520	6,141	54,541
FIRE	391	4,721	473	9,591	513	10,193	580	6,141
Services	2,084	47,579	2,174	54,278	2,301	62,416	2,573	66,741
Tennessee, Total	77,138	1,536,397	80,190	1,671,312	81,482	1,771,536	83,556	1,788,541
Agriculture	1,424	10,502	1,534	11,105	1,531	10,319	1,558	11,741
Mining	477	12,058	529	12,970	505	9,801	506	8,441
Construction	8,751	93,961	9,104	100,183	9,023	100,042	9,222	91,341
Manufacturing	7,326	557,692	7,699	601,440	7,873	618,846	7,784	584,941
Transportation	2,942	115,955	3,080	116,652	3,169	148,168	3,252	151,741
Wholesale Trade	8,901	106,120	9,547	114,448	9,788	118,264	9,971	114,641
Retail Trade	28,723	282,331	28,042	288,926	28,259	304,317	28,628	303,441
FIRE	5,033	70,177	5,736	77,067	5,885	86,463	6,055	97,241
Services	13,562	287,600	14,918	348,521	15,450	375,316	16,581	424,841
Texas, Total	283,184	4,603,086	298,066	5,272,928	310,594	5,886,050	338,795	6,385,241
Agriculture	7,949	58,985	8,057	62,688	8,213	61,773	8,658	70,541
Mining	9,143	193,154	10,070	219,064	11,163	260,701	14,043	334,541
Construction	35,259	374,518	36,145	435,714	36,877	458,224	40,390	506,341

Manufacturing	22,658	894,512	24,210	1,050,781	25,917	1,234,196	27,795	1,263,901
Transportation	12,450	408,352	12,797	456,892	13,755	528,912	15,007	540,365
Wholesale Trade	34,241	345,535	36,927	404,033	38,888	455,895	42,757	494,344
Retail Trade	82,188	870,996	82,357	963,641	84,971	1,052,613	90,068	1,149,663
FIRE	24,850	378,676	27,386	422,048	28,019	451,599	29,637	502,002
Services	54,446	1,078,358	60,116	1,258,067	62,790	1,382,137	70,439	1,523,575
Utah, Total	24,255	330,481	27,300	437,675	28,671	490,830	30,704	509,001
Agriculture	538	3,089	588	3,691	604	3,751	643	3,675
Mining	290	19,514	332	23,523	407	27,869	521	33,048
Construction	4,392	27,606	5,050	35,544	5,299	38,974	5,452	40,423
Manufacturing	2,044	71,200	2,247	81,378	2,374	93,467	2,522	105,319
Transportation	769	18,656	892	31,185	951	39,589	1,047	41,834
Wholesale Trade	2,618	26,577	3,024	32,218	3,196	36,272	3,459	38,276
Retail Trade	7,303	70,594	7,526	94,732	7,761	106,396	8,094	105,023
FIRE	2,031	28,215	2,671	38,887	2,805	40,328	3,002	34,067
Services	4,271	65,031	4,970	96,516	5,275	104,182	5,965	107,336
Vermont, Total	10,625	140,059	10,586	155,166	11,010	161,059	11,257	163,997
Agriculture	171	1,035	160	820	160	955	164	808
Mining	24	1,390	26	1,306	25	1,014	24	748
Construction	1,160	7,418	1,038	7,710	1,081	7,605	1,136	7,996
Manufacturing	1,020	48,952	1,057	54,226	1,093	57,158	1,100	54,771
Transportation	452	7,097	458	7,381	463	7,867	473	7,925
Wholesale Trade	819	8,917	857	10,276	872	11,121	884	11,241
Retail Trade	4,754	30,745	4,601	33,556	4,748	33,948	4,773	33,758
FIRE	379	5,109	444	6,133	502	6,160	537	6,555
Services	1,847	29,396	1,944	33,759	2,066	35,231	2,167	40,276

Table A1.20 Number of Establishments and Establishment Employment By State and Industry Division, 1976, 1978, 1980, 1982—
Continued

State/Industry Division	1976		1978		1980		1982	
	Estab	Employ	Estab	Employ	Estab	Employ	Estab	Employ
Virginia, Total	80,546	1,636,090	83,487	1,762,724	87,278	1,856,904	91,270	1,863,006
Agriculture	1,451	11,032	1,452	12,140	1,500	12,643	1,564	13,665
Mining	760	31,935	840	36,613	868	25,239	873	26,150
Construction	12,344	128,825	12,961	140,032	13,427	138,337	13,994	128,120
Manufacturing	5,450	453,606	5,577	458,988	5,894	494,537	6,055	451,912
Transportation	3,312	112,019	3,351	121,980	3,566	136,740	3,707	127,541
Wholesale Trade	7,277	88,539	7,700	93,116	7,983	99,633	8,195	102,265
Retail Trade	27,785	298,139	27,226	330,154	28,066	344,354	28,629	359,919
FIRE	6,170	123,172	6,805	123,624	7,154	121,258	7,521	124,302
Services	15,997	388,823	17,577	446,078	18,820	484,163	20,733	529,132
Washington, Total	74,462	1,159,536	80,016	1,272,606	82,885	1,407,306	87,443	1,403,132
Agriculture	2,455	23,017	2,579	22,631	2,657	23,516	2,823	24,322
Mining	160	2,290	150	3,081	171	3,695	200	3,762
Construction	10,577	83,577	11,475	108,508	11,810	93,438	12,613	89,229
Manufacturing	7,129	224,147	7,508	258,713	7,757	303,923	8,012	275,790
Transportation	4,023	147,616	3,870	97,601	4,005	123,562	4,150	125,142
Wholesale Trade	8,117	80,550	8,730	94,663	9,044	99,804	9,315	96,389
Retail Trade	24,057	228,727	24,938	273,153	25,572	300,907	26,566	301,179
FIRE	4,227	72,297	5,262	83,108	5,513	88,172	5,864	96,553
Services	13,717	297,314	15,502	331,148	16,356	370,288	17,900	390,766
West Virginia, Total	29,988	543,266	29,179	581,514	28,654	570,236	28,551	558,970
Agriculture	315	2,541	280	2,623	285	2,506	304	2,344
Mining	1,373	59,888	1,395	76,830	1,345	69,399	1,369	64,876
Construction	3,567	33,837	3,616	34,801	3,471	30,315	3,451	27,911

Manufacturing	1,853	125,521	1,793	128,956	1,784	127,764	1,683	110,360
Transportation	1,603	53,836	1,577	44,805	1,586	47,295	1,536	44,754
Wholesale Trade	2,885	32,293	2,962	32,235	2,944	32,375	2,916	30,970
Retail Trade	12,109	102,182	11,091	109,030	10,798	107,534	10,710	102,977
FIRE	1,659	19,171	1,744	23,791	1,770	24,025	1,724	23,700
Services	4,623	113,998	4,722	128,443	4,672	129,024	4,859	151,077
Wisconsin, Total	95,121	1,722,849	96,099	1,899,033	100,031	2,018,155	102,029	1,990,783
Agriculture	2,539	14,762	2,618	16,075	2,701	15,475	2,737	16,028
Mining	238	2,607	249	2,795	250	2,728	260	2,508
Construction	12,117	82,478	12,228	91,281	12,598	91,284	12,804	81,517
Manufacturing	10,399	607,572	10,463	660,179	10,895	697,830	10,855	653,380
Transportation	3,647	96,345	3,659	96,541	3,851	100,828	3,995	106,093
Wholesale Trade	10,310	95,670	10,595	103,550	10,959	109,942	11,081	108,253
Retail Trade	35,416	328,876	34,127	366,777	35,203	407,937	35,655	401,542
FIRE	4,969	73,853	5,603	88,566	5,894	93,946	6,065	102,691
Services	15,485	420,585	16,558	473,269	17,680	498,185	18,577	518,772
Wyoming, Total	10,300	106,651	11,438	145,109	12,355	165,198	13,406	173,206
Agriculture	188	1,202	200	1,370	216	1,250	237	1,564
Mining	675	16,687	809	22,806	956	31,318	1,120	36,107
Construction	1,432	12,189	1,769	17,250	1,888	20,410	2,044	19,523
Manufacturing	505	10,109	533	11,045	585	13,033	591	12,180
Transportation	606	6,916	652	12,748	704	13,611	750	13,317
Wholesale Trade	930	5,848	1,093	8,149	1,183	9,060	1,240	9,474
Retail Trade	4,037	28,860	4,190	34,552	4,357	37,305	4,549	38,762
FIRE	274	1,981	428	4,136	487	6,221	574	6,575
Services	1,653	22,860	1,764	33,053	1,980	32,989	2,301	35,511

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Table A1.21 *Changes in Establishment Employment in Agriculture, Forestry, and Fishing in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	< 20	20-99	100-499	500+
Base Year					
1976	864,915	412,014	197,951	112,335	142,615
1978	902,144	424,765	205,745	123,637	147,997
1980	877,868	420,052	181,314	124,400	151,102
1982	907,420	501,702	182,740	100,107	122,871
Startups*					
	Percent				
1976-1978	9.6	9.7	6.8	9.1	13.9
1978-1980	6.0	5.4	4.2	5.1	11.1
1980-1982	7.3	7.0	5.8	7.8	9.4
1976-1982	21.8	21.7	17.5	22.7	27.7
Closures					
1976-1978	8.0	8.5	6.6	7.2	8.7
1978-1980	5.7	4.4	4.6	4.2	12.0
1980-1982	9.2	5.3	9.2	10.1	19.4
1976-1982	18.9	16.2	18.1	20.4	26.4
Expansions					
1976-1978	15.9	19.4	12.2	12.8	13.6
1978-1980	10.5	11.0	8.5	7.4	14.7
1980-1982	15.1	20.9	10.7	9.2	9.0
1976-1982	23.4	30.7	18.6	14.8	15.8
Shrinkages					
1976-1978	13.3	7.5	14.0	19.2	21.4
1978-1980	13.6	10.2	19.2	18.8	10.9
1980-1982	9.8	6.4	10.7	14.8	14.7
1976-1982	21.5	14.4	25.6	28.0	30.9
Net Changes**					
1976-1978	4.3	13.0	-1.6	-4.5	5.5
1978-1980	-2.7	1.8	-11.2	10.4	2.8
1980-1982	3.4	16.3	-3.3	7.9	14.2
1976-1982	4.9	21.8	-7.7	10.9	13.8

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year

Table A1.21 *Changes in the Number of Establishments in Agriculture, Forestry, and Fishing in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-199	500 +
Base Year					
1976	101,653	90,834	7,564	1,602	1,653
1978	103,300	91,901	7,724	1,869	1,806
1980	105,363	94,558	7,098	1,902	1,805
1982	108,900	97,907	7,572	1,807	1,614
Startups*					
	Percent				
1976-1978	12.0	11.9	7.9	18.0	28.6
1978-1980	7.0	6.9	6.2	8.1	14.0
1980-1982	9.3	9.2	7.7	13.9	12.9
1976-1982	25.9	25.8	21.1	39.7	40.5
Closures					
1976-1978	10.4	10.4	8.8	10.9	17.1
1978-1980	5.0	4.8	5.4	6.0	13.0
1980-1982	5.9	5.1	10.4	13.9	22.7
1976-1982	18.7	18.0	21.0	26.9	42.9
Expansions					
1976-1978	18.2	18.3	16.2	18.7	19.0
1978-1980	13.8	13.9	12.5	12.2	13.6
1980-1982	17.9	18.2	15.0	15.2	15.7
1976-1982	28.1	28.9	20.9	24.0	20.6
Shrinkages					
1976-1978	12.1	11.1	22.3	18.6	12.6
1978-1980	15.5	14.7	25.9	17.3	7.8
1980-1982	11.4	10.7	19.0	16.8	13.0
1976-1982	22.0	20.7	36.4	27.0	17.5
Net Changes**					
1976-1978	1.6	1.6	-0.8	7.1	11.4
1978-1980	2.0	2.1	0.7	2.1	1.0
1980-1982	3.4	4.1	-2.7	0.0	-9.8
1976-1982	7.1	7.8	0.1	12.7	-2.4

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Mining in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	< 20	20-99	100-499	500+
Base Year					
1976	967,488	115,808	130,649	108,336	612,695
1978	1,093,996	125,560	150,394	136,055	681,987
1980	1,200,913	130,686	158,633	170,029	741,564
1982	1,330,853	199,285	198,932	172,450	760,186
Startups*					
			Percent		
1976-1978	15.7	24.1	17.7	16.4	13.5
1978-1980	12.3	18.1	14.5	12.9	10.6
1980-1982	17.4	32.9	24.4	19.4	12.8
1976-1982	48.6	68.0	63.7	72.1	32.6
Closures					
1976-1978	10.9	15.3	11.7	7.9	10.4
1978-1980	8.7	10.6	9.8	7.0	8.4
1980-1982	14.8	12.6	14.4	15.4	15.1
1976-1982	27.1	30.3	28.6	26.3	26.3
Expansions					
1976-1978	20.5	27.0	23.0	22.4	18.4
1978-1980	15.1	22.9	15.9	14.3	13.6
1980-1982	17.7	33.8	19.0	17.0	14.8
1976-1982	32.7	46.8	35.3	33.4	29.3
Shrinkages					
1976-1978	12.1	7.3	9.7	10.6	13.9
1978-1980	8.8	9.2	12.3	10.7	7.6
1980-1982	9.5	6.9	11.6	14.0	8.5
1976-1982	16.6	12.4	18.1	20.0	16.5
Net Changes**					
1976-1978	13.1	28.4	19.3	20.4	7.6
1978-1980	9.8	21.1	8.2	9.5	8.1
1980-1982	10.8	47.2	17.4	6.9	3.9
1976-1982	37.6	72.1	52.3	59.2	24.1

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Mining in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	< 20	20-99	100-499	500 +
Base Year					
1976	36,255	22,880	5,886	2,255	5,234
1978	39,089	23,930	6,579	2,831	5,749
1980	42,529	25,518	7,373	3,450	6,186
1982	50,061	31,422	8,488	3,785	6,366
Startups*					
	Percent				
1976-1978	23.8	24.6	19.9	26.8	23.8
1978-1980	19.5	19.8	17.8	20.3	19.8
1980-1982	32.3	34.7	30.3	33.5	24.1
1976-1982	70.2	68.5	73.9	98.3	61.6
Closures					
1976-1978	16.0	16.9	13.1	11.9	17.1
1978-1980	10.7	10.7	10.3	8.0	12.6
1980-1982	14.6	12.6	14.7	17.3	21.2
1976-1982	32.2	31.2	29.7	30.4	40.0
Expansions					
1976-1978	24.1	22.7	25.1	28.4	26.7
1978-1980	19.5	20.0	17.9	20.2	19.1
1980-1982	23.8	24.1	21.6	24.1	25.2
1976-1982	31.0	31.3	29.2	32.5	31.1
Shrinkages					
1976-1978	12.1	11.3	15.5	13.5	10.7
1978-1980	12.4	12.3	15.9	12.6	8.6
1980-1982	12.2	10.8	16.0	14.6	12.4
1976-1982	17.9	16.7	24.6	19.2	15.0
Net Changes**					
1976-1978	12.1	11.3	15.5	13.5	10.7
1978-1980	12.4	12.3	15.9	12.6	8.6
1980-1982	12.2	10.8	16.0	16.2	2.9
1976-1982	17.9	16.7	24.6	67.8	21.6

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Construction in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	20	20-99	100-499	500+
Base Year					
1976	4,561,179	1,962,530	1,164,989	658,323	775,637
1978	4,922,725	2,080,826	1,253,895	703,598	884,406
1980	4,973,137	2,073,996	1,255,874	770,322	872,945
1982	4,920,527	2,449,236	1,140,953	565,411	764,927
Startups*	Percent				
1976-1978	14.1	17.8	8.2	8.2	18.9
1978-1980	8.1	9.5	4.8	5.4	11.5
1980-1982	11.2	10.9	6.0	6.8	23.0
1976-1982	31.3	35.6	22.7	20.9	42.6
Closures					
1976-1978	11.9	14.9	9.4	10.1	9.4
1978-1980	9.4	8.3	6.3	5.9	19.4
1980-1982	12.4	9.5	10.2	11.5	23.3
1976-1982	27.1	26.8	22.3	24.3	37.8
Expansions					
1976-1978	18.0	22.2	14.6	13.9	15.9
1978-1980	13.6	15.0	11.4	12.5	14.4
1980-1982	13.4	19.1	10.1	8.7	8.6
1976-1982	22.4	30.0	19.0	14.3	15.1
Shrinkages					
1976-1978	12.3	7.8	13.0	17.1	18.6
1978-1980	11.3	9.9	12.6	13.1	11.1
1980-1982	13.2	9.0	15.1	17.9	16.4
1976-1982	18.7	14.0	21.5	25.1	21.2
Net Changes**					
1976-1978	7.9	17.3	0.3	-5.1	6.8
1978-1980	1.0	6.3	-2.6	-1.0	-4.5
1980-1982	-1.1	11.6	-9.2	-13.9	-8.1
1976-1982	7.9	24.8	-2.1	-14.1	-1.4

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments--Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Construction in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	20	20-99	100-499	500 +
Base Year					
1976	520,343	464,539	39,249	8,761	7,794
1978	527,137	465,315	42,477	9,850	9,495
1980	537,583	475,943	42,628	10,660	8,352
1982	558,822	500,839	40,268	9,172	8,543
Startups*					
	Percent				
1976-1978	20.8	21.4	11.0	17.3	39.8
1978-1980	11.5	11.9	6.5	9.5	17.3
1980-1982	13.7	13.8	8.0	14.6	35.6
1976-1982	39.1	39.7	27.8	36.3	62.2
Closures					
1976-1978	19.5	20.3	11.0	13.4	18.8
1978-1980	9.5	9.4	7.1	8.0	25.3
1980-1982	9.8	8.9	12.2	18.3	32.3
1976-1982	31.7	31.9	25.2	31.7	52.6
Expansions					
1976-1978	20.5	20.6	20.2	19.7	20.0
1978-1980	16.8	16.7	18.1	18.1	13.4
1980-1982	17.6	17.9	15.5	14.1	13.6
1976-1982	24.9	25.3	22.3	21.3	18.8
Shrinkages					
1976-1978	12.7	11.6	23.6	20.9	14.6
1978-1980	15.6	15.0	23.5	16.4	9.3
1980-1982	15.9	14.6	29.1	23.3	13.5
1976-1982	21.1	19.7	36.5	30.4	15.6
Net Changes**					
1976-1978	1.3	1.0	0.0	3.9	21.0
1978-1980	2.0	2.4	-0.6	1.5	-8.0
1980-1982	4.0	4.9	-4.2	-3.8	3.3
1976-1982	7.4	7.8	2.6	4.6	9.6

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Manufacturing in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	20	20-99	100-499	500+
Base Year					
1976	21,913,912	1,534,324	3,781,528	3,215,577	14,382,483
1978	23,334,212	1,586,967	3,929,657	3,519,015	15,298,573
1980	24,197,093	1,610,880	2,969,500	3,695,579	16,221,134
1982	24,084,245	2,189,145	3,078,268	3,282,649	14,534,183
Startups*					
	Percent				
1976-1978	11.5	16.2	7.5	8.7	12.4
1978-1980	8.0	9.9	1.3	4.9	9.2
1980-1982	7.3	12.6	5.9	6.0	7.3
1976-1982	23.5	34.0	19.0	20.1	24.0
Closures					
1976-1978	10.7	13.1	9.4	8.8	11.1
1978-1980	6.0	8.5	6.6	5.5	5.8
1980-1982	13.1	10.9	9.8	11.1	14.4
1976-1982	24.2	25.8	22.0	22.5	24.8
Expansions					
1976-1978	13.1	27.1	17.0	13.5	10.7
1978-1980	9.2	18.8	11.0	9.1	7.9
1980-1982	8.4	20.1	10.1	7.8	7.1
1976-1982	18.4	42.5	24.0	17.9	14.8
Shrinkages					
1976-1978	7.4	5.3	6.2	7.7	7.9
1978-1980	6.1	5.3	5.8	7.1	6.1
1980-1982	8.3	6.2	8.3	9.9	8.2
1976-1982	12.3	8.0	10.3	13.3	13.0
Net Changes**					
1976-1978	6.5	24.8	8.9	5.8	4.2
1978-1980	5.0	14.9	3.0	1.4	5.2
1980-1982	5.8	15.6	-2.2	-7.1	-8.2
1976-1982	5.3	42.7	10.6	2.1	1.1

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Manufacturing in the U S by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	432,555	256,632	84,879	35,408	55,634
1978	444,935	255,440	89,170	39,213	61,112
1980	460,564	257,669	90,791	41,441	70,663
1982	461,294	279,983	85,295	36,708	59,308
Startups*					
	Percent				
1976-1978	18.1	19.7	10.2	15.9	24.6
1978-1980	12.6	12.8	6.2	8.8	23.8
1980-1982	14.0	16.7	8.7	10.7	12.6
1976-1982	36.2	38.6	24.8	32.6	44.9
Closures					
1976-1978	15.3	16.5	11.0	12.7	17.8
1978-1980	9.1	9.8	7.4	7.6	9.5
1980-1982	13.8	11.5	11.3	14.1	25.2
1976-1982	29.6	29.5	24.3	28.9	38.3
Expansions					
1976-1978	28.2	28.1	30.3	28.5	25.4
1978-1980	22.8	23.5	23.7	21.6	19.1
1980-1982	22.0	24.2	21.7	19.3	16.3
1976-1982	33.4	34.9	34.3	30.2	27.3
Shrinkages					
1976-1978	13.5	11.8	16.6	17.2	14.3
1978-1980	12.6	11.6	15.2	15.6	11.4
1980-1982	16.1	13.6	22.1	21.5	14.7
1976-1982	18.9	16.1	24.8	25.2	19.1
Net Changes**					
1976-1978	2.9	3.2	-0.9	3.2	6.7
1978-1980	3.5	2.9	-1.2	1.2	14.3
1980-1982	0.2	5.2	-2.6	-3.4	-12.6
1976-1982	6.6	9.1	0.5	3.6	6.6

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Transportation, Communications, etc. in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	< 20	20-99	100-499	500+
Base Year					
1976	5,332,032	628,405	623,426	527,696	3,552,505
1978	5,620,401	633,434	657,650	559,937	3,769,380
1980	5,990,089	650,466	675,317	604,722	4,059,584
1982	6,025,663	841,409	694,579	570,013	3,919,662
Startups*					
	Percent				
1976-1978	11.6	13.4	8.4	8.6	1
1978-1980	7.2	9.7	6.0	6.3	
1980-1982	8.0	13.0	8.3	8.1	
1976-1982	25.5	33.4	25.5	26.8	2
Closures					
1976-1978	7.2	13.7	8.8	7.9	
1978-1980	5.0	7.4	6.1	5.0	
1980-1982	10.2	10.3	12.0	12.2	
1976-1982	17.5	26.2	22.5	22.3	1
Expansions					
1976-1978	13.2	20.7	14.6	14.9	1
1978-1980	10.9	15.5	11.5	10.1	1
1980-1982	10.9	21.8	11.3	11.2	
1976-1982	23.3	36.3	22.6	21.7	2
Shrinkages					
1976-1978	12.2	6.2	8.9	11.3	1
1978-1980	6.5	6.4	7.8	9.2	
1980-1982	8.1	5.7	8.4	10.4	
1976-1982	18.3	9.6	14.2	18.2	2
Net Changes**					
1976-1978	5.4	14.2	5.4	4.3	
1978-1980	6.6	11.3	3.6	2.2	
1980-1982	0.6	18.9	-0.8	-3.3	-
1976-1982	13.0	33.9	11.4	8.1	1

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Transportation, Communications, etc. in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	185,783	118,565	25,983	11,492	29,743
1978	187,558	113,725	27,293	12,425	34,115
1980	195,546	117,087	28,248	13,630	36,581
1982	201,213	125,842	27,741	13,236	34,394
Startups*					
	Percent				
1976-1978	17.4	16.2	13.0	19.0	25.6
1978-1980	12.1	12.0	10.0	14.1	13.5
1980-1982	16.2	16.7	12.9	16.9	17.0
1976-1982	38.8	36.8	34.2	46.8	47.7
Closures					
1976-1978	16.5	18.5	11.6	13.0	14.2
1978-1980	7.9	8.3	6.9	6.9	7.6
1980-1982	13.3	10.6	15.0	17.5	19.1
1976-1982	30.5	30.7	27.4	31.6	32.1
Expansions					
1976-1978	22.5	21.9	25.1	25.3	21.9
1978-1980	18.9	19.4	20.3	17.6	16.4
1980-1982	21.4	22.4	20.8	20.7	18.9
1976-1982	31.0	30.9	31.8	31.4	30.3
Shrinkages					
1976-1978	12.6	11.3	17.2	13.7	13.0
1978-1980	11.4	11.8	14.0	11.2	8.0
1980-1982	12.8	11.4	17.0	14.6	13.3
1976-1982	18.0	16.3	24.0	19.3	19.0
Net Changes**					
1976-1978	0.9	-2.3	1.4	6.1	11.4
1978-1980	4.3	3.7	3.1	7.2	5.9
1980-1982	2.9	6.1	-2.0	-0.6	-2.2
1976-1982	8.3	6.1	6.8	15.2	15.5

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year

Table A1.21 Changes in Establishment Employment in Wholesale Trade in the U.S. by Employment Size of Firm

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	4,986,723	1,778,791	1,233,931	613,839	1,360,162
1978	5,430,225	1,860,783	1,350,900	711,497	1,507,045
1980	5,714,067	1,902,832	1,422,836	796,701	1,591,698
1982	5,743,416	2,291,742	1,335,505	691,672	1,424,497
Startups*					
	Percent				
1976-1978	13.6	13.7	7.2	11.0	20.6
1978-1980	8.0	8.5	4.3	7.2	11.1
1980-1982	9.9	12.3	6.0	8.8	10.9
1976-1982	30.2	32.7	20.1	29.6	36.4
Closures					
1976-1978	10.8	10.7	7.4	8.7	13.0
1978-1980	7.5	7.5	5.0	5.3	10.7
1980-1982	12.5	10.4	9.8	11.4	12.9
1976-1982	25.1	23.0	19.5	22.8	34.1
Expansions					
1976-1978	13.9	16.1	12.9	13.1	12.5
1978-1980	10.7	12.0	9.0	10.3	10.7
1980-1982	10.7	14.7	8.8	9.1	8.4
1976-1982	21.5	27.3	19.2	19.8	16.7
Shrinkages					
1976-1978	7.9	5.5	7.3	9.2	11.0
1978-1980	6.0	4.8	6.1	7.8	6.4
1980-1982	7.5	5.5	7.7	9.9	8.7
1976-1982	11.4	8.1	11.7	14.0	14.3
Net Changes**					
1976-1978	8.9	13.7	5.4	6.1	7.0
1978-1980	5.2	8.1	2.2	4.4	4.8
1980-1982	0.5	11.0	-2.7	-3.3	-2.3
1976-1982	15.2	28.9	8.2	12.7	4.7

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments, Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Wholesale Trade in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500+
Base Year					
1976	474,493	353,662	61,930	21,038	37,863
1978	498,773	362,616	69,154	24,475	42,528
1980	513,188	368,934	73,466	27,148	43,640
1982	530,210	396,944	67,982	24,999	40,285
Startups*	Percent				
1976-1978	19.2	18.5	14.7	22.4	31.6
1978-1980	12.0	11.9	8.5	13.9	17.5
1980-1982	16.5	17.3	11.5	16.7	18.1
1976-1982	40.4	39.7	34.0	50.8	51.7
Closures					
1976-1978	14.1	14.2	10.1	14.1	19.9
1978-1980	9.1	9.2	6.1	7.5	14.0
1980-1982	13.2	11.6	12.7	16.0	25.2
1976-1982	28.6	27.4	24.2	31.9	45.3
Expansions					
1976-1978	24.3	23.9	27.9	25.6	21.1
1978-1980	19.3	19.6	20.6	18.8	15.2
1980-1982	20.9	21.7	20.3	19.0	15.9
1976-1982	31.3	31.7	33.6	31.2	23.6
Shrinkages					
1976-1978	12.5	11.9	15.9	13.2	12.5
1978-1980	10.9	10.8	13.3	10.6	8.3
1980-1982	13.6	12.5	18.4	15.5	13.0
1976-1982	17.4	16.5	23.3	18.2	15.7
Net Changes**					
1976-1978	5.1	4.3	4.6	8.3	11.7
1978-1980	2.9	2.7	2.4	6.5	3.5
1980-1982	3.3	5.6	-1.2	0.7	-7.1
1976-1982	11.8	12.3	9.8	18.8	6.4

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments--Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Retail Trade in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500+
Base Year					
1976	14,014,749	5,162,605	3,046,027	1,290,135	4,515,982
1978	15,155,145	5,104,096	3,389,748	1,496,127	5,165,174
1980	15,958,798	5,133,068	3,421,608	1,658,937	5,745,185
1982	16,207,016	5,652,841	3,372,985	1,552,749	5,628,441
Startups*					
	Percent				
1976-1978	15.8	15.6	14.9	18.4	15.8
1978-1980	10.4	9.5	8.3	10.2	12.7
1980-1982	10.4	12.0	10.3	11.8	8.6
1976-1982	34.4	31.4	32.4	43.7	36.7
Closures					
1976-1978	11.7	17.4	9.7	8.3	7.5
1978-1980	6.3	9.2	7.0	5.0	3.4
1980-1982	10.4	11.6	12.7	16.0	25.2
1976-1982	28.6	27.4	24.2	31.9	45.3
Expansions					
1976-1978	24.3	23.9	27.9	25.6	21.1
1978-1980	19.3	19.6	20.6	18.8	15.2
1980-1982	20.9	21.7	20.3	19.0	15.9
1976-1982	31.3	31.7	33.6	31.2	23.6
Shrinkages					
1976-1978	12.5	11.9	15.9	13.2	12.5
1978-1980	10.9	10.8	13.3	10.6	8.0
1980-1982	13.6	12.5	18.4	15.5	13.0
1976-1982	17.4	16.5	23.3	18.2	15.7
Net Changes**					
1976-1978	5.1	4.3	4.6	8.3	11.7
1978-1980	2.9	2.7	2.4	6.5	3.5
1980-1982	3.3	5.6	-1.2	0.7	-7.1
1976-1982	11.8	12.3	9.8	18.8	6.4

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Retail Trade in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	1,410,566	1,152,219	141,380	40,671	76,296
1978	1,387,118	1,099,498	155,335	48,603	83,684
1980	1,411,981	1,105,336	159,026	54,083	93,536
1982	1,442,770	1,148,352	153,396	50,527	90,495
Startups*					
		Percent			
1976-1978	18.9	18.5	17.6	24.4	24.0
1978-1980	11.8	11.6	10.0	12.4	16.8
1980-1982	14.6	14.9	11.7	15.0	16.1
1976-1982	36.6	35.0	36.2	53.5	52.0
Closures					
1976-1978	20.6	22.2	12.2	12.9	15.6
1978-1980	10.0	10.9	7.5	5.7	5.6
1980-1982	12.4	11.8	13.9	13.7	16.1
1976-1982	34.3	35.4	27.7	29.4	33.4
Expansions					
1976-1978	18.2	17.8	21.8	18.8	17.6
1978-1980	14.7	15.2	14.4	12.1	10.0
1980-1982	16.2	16.4	15.3	15.8	15.2
1976-1982	23.3	22.7	26.3	25.7	25.0
Shrinkages					
1976-1978	12.6	12.3	15.8	13.0	11.0
1978-1980	12.4	12.6	15.1	9.7	6.6
1980-1982	14.0	13.5	18.1	14.8	13.3
1976-1982	18.3	17.5	25.0	20.3	16.9
Net Changes**					
1976-1978	-1.6	-3.7	5.4	11.4	8.4
1978-1980	1.8	0.8	2.5	6.7	11.2
1980-1982	2.2	3.0	-2.1	1.3	0.0
1976-1982	2.3	-0.3	8.5	24.2	18.6

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Finance in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500+
Base Year					
1976	5,364,377	1,034,011	906,062	808,127	2,616,177
1978	5,740,456	1,126,610	982,308	885,983	2,745,555
1980	5,955,801	1,153,845	971,433	935,253	2,895,270
1982	6,400,001	1,516,198	1,035,550	869,526	2,978,729
Startups*					
	Percent				
1976-1978	13.5	16.1	10.2	11.4	14.4
1978-1980	5.6	8.6	4.8	4.9	4.9
1980-1982	7.0	10.9	5.9	5.8	6.2
1976-1982	27.1	35.4	25.7	22.9	25.6
Closures					
1976-1978	8.0	6.7	5.2	7.4	9.7
1978-1980	5.0	6.2	4.3	4.0	5.0
1980-1982	7.2	7.8	8.2	8.9	6.0
1976-1982	17.7	18.2	15.9	18.9	17.8
Expansions					
1976-1978	16.3	23.7	15.9	17.0	13.2
1978-1980	12.0	16.6	11.5	12.3	10.2
1980-1982	16.3	24.6	13.4	14.2	14.7
1976-1982	28.9	42.1	26.1	25.9	25.6
Shrinkages					
1976-1978	14.8	8.1	15.3	16.8	16.7
1978-1980	8.9	7.8	12.0	13.3	6.8
1980-1982	8.7	6.4	9.2	11.8	8.5
1976-1982	19.0	12.8	21.5	22.3	19.5
Net Changes**					
1976-1978	7.0	25.1	5.6	4.2	1.2
1978-1980	3.8	11.2	-0.0	-0.2	3.3
1980-1982	7.5	21.2	1.9	-0.7	6.5
1976-1982	19.3	46.6	14.3	7.6	13.9

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent

**Adding net change to the base figure yields end year figures only in the "All Establishments, Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Finance in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	< 20	20-99	100-499	500+
Base Year					
1976	298,060	218,132	36,629	16,106	27,193
1978	335,643	237,982	43,497	23,742	30,422
1980	348,336	244,955	43,741	25,937	33,703
1982	361,534	258,876	43,558	23,111	35,989
Startups*					
	Percent				
1976-1978	21.8	18.6	18.5	41.4	40.5
1978-1980	10.4	10.2	8.4	9.6	14.9
1980-1982	13.0	13.3	9.4	12.5	16.0
1976-1982	43.4	38.9	39.5	68.0	70.9
Closures					
1976-1978	9.2	8.0	7.0	9.8	21.3
1978-1980	6.6	7.2	5.5	4.8	5.2
1980-1982	9.2	8.3	10.2	10.6	14.0
1976-1982	22.2	20.3	20.5	24.5	38.4
Expansions					
1976-1978	22.4	21.5	26.7	25.9	21.9
1978-1980	18.3	17.9	20.1	18.0	18.9
1980-1982	20.9	19.6	23.1	24.3	25.5
1976-1982	31.5	31.3	33.1	33.8	29.6
Shrinkages					
1976-1978	14.6	13.0	22.9	18.8	14.1
1978-1980	12.8	12.2	18.1	12.8	9.5
1980-1982	13.3	11.7	18.3	16.7	15.8
1976-1982	21.5	20.0	31.0	25.7	18.2
Net Changes**					
1976-1978	12.6	10.5	11.5	31.7	19.2
1978-1980	3.8	3.1	3.0	4.8	9.7
1980-1982	3.8	5.1	-0.8	1.9	2.0
1976-1982	21.3	18.6	18.9	43.5	32.5

*If there were no such establishments at the start of the period, the startup rate is specific 999.9 percent

**Adding net change to the base figure yields end year figures only in the "All Establishments - Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in Services in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	17,955,687	2,968,702	2,749,597	3,531,680	8,705,708
1978	20,188,993	3,263,054	3,056,232	3,875,719	9,993,988
1980	21,685,577	3,439,265	3,156,562	4,083,014	11,006,738
1982	23,213,199	4,530,404	3,471,014	4,222,033	10,989,748
Startups*	Percent				
1976-1978	12.6	17.3	10.4	8.3	13.4
1978-1980	7.4	10.2	5.7	5.2	8.0
1980-1982	8.2	13.2	7.2	6.2	7.7
1976-1982	30.0	42.0	27.7	22.6	29.7
Closures					
1976-1978	8.4	9.9	6.6	6.1	9.4
1978-1980	5.1	6.5	4.9	4.6	4.9
1980-1982	7.9	7.6	8.1	7.6	8.0
1976-1982	17.9	20.7	17.4	16.0	18.0
Expansions					
1976-1978	15.7	22.6	16.6	14.4	13.7
1978-1980	10.7	15.8	11.6	10.0	9.0
1980-1982	12.8	22.7	13.3	11.6	9.9
1976-1982	28.3	41.3	28.9	25.3	25.0
Shrinkages					
1976-1978	7.5	6.7	8.2	8.5	7.1
1978-1980	5.6	6.4	7.5	6.6	4.4
1980-1982	6.1	5.8	7.1	7.2	5.4
1976-1982	11.2	10.0	13.0	12.3	10.5
Net Changes**					
1976-1978	12.4	23.3	12.2	8.1	10.6
1978-1980	7.4	13.0	4.8	4.0	7.7
1980-1982	7.0	22.4	5.2	3.0	4.3
1976-1982	29.3	52.6	26.2	19.5	26.2

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in Services in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	821,101	639,391	91,762	38,648	51,300
1978	893,322	682,944	105,506	47,462	57,410
1980	937,583	713,683	109,921	51,855	62,124
1982	1,008,915	785,217	110,196	49,440	64,062
Startups*					
	Percent				
1976-1978	21.4	21.1	16.6	22.0	33.7
1978-1980	12.7	12.8	9.0	12.6	18.9
1980-1982	16.7	17.3	11.9	14.5	21.1
1976-1982	47.6	47.0	41.2	51.9	62.7
Closures					
1976-1978	12.6	12.9	8.3	8.9	20.1
1978-1980	7.8	7.9	5.6	5.9	11.5
1980-1982	9.1	8.0	10.3	11.8	17.9
1976-1982	24.7	24.2	21.2	24.0	37.9
Expansions					
1976-1978	24.2	23.5	28.0	28.1	24.4
1978-1980	19.8	19.6	21.8	20.5	18.0
1980-1982	22.8	22.4	24.5	24.8	22.7
1976-1982	33.5	32.9	37.2	37.8	32.5
Shrinkages					
1976-1978	13.2	12.6	17.9	15.3	10.6
1978-1980	12.3	12.3	15.0	11.1	7.7
1980-1982	12.9	12.2	17.0	14.8	11.7
1976-1982	18.7	17.9	25.6	20.9	14.1
Net Changes**					
1976-1978	8.8	8.2	8.3	13.1	13.6
1978-1980	5.0	4.9	3.3	6.7	7.4
1980-1982	7.6	9.3	1.6	2.6	3.2
1976-1982	22.9	22.8	20.1	27.9	24.9

*If there were no such establishments at the start of the period, the startup rate is specified as 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments—Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in Establishment Employment in All Industries in the U.S. by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500+
Base Year					
1976	7,5961,361	15,597,190	12,834,160	10,866,048	36,663,964
1978	82,388,347	16,206,094	13,976,530	12,011,568	40,194,155
1980	86,853,343	16,515,089	14,213,078	12,838,955	43,286,221
1982	87,832,340	20,171,961	14,510,526	12,026,609	41,123,244
Startups*					
	Percent				
1976-1978	13.0	15.9	10.2	10.1	13.7
1978-1980	8.1	9.5	5.8	6.0	9.0
1980-1982	8.6	12.2	7.6	7.3	8.0
1976-1982	28.7	34.7	25.7	25.4	28.1
Closures					
1976-1978	9.9	13.3	8.3	7.8	9.7
1978-1980	6.0	7.9	6.0	5.0	5.6
1980-1982	10.6	9.5	10.0	10.1	11.4
1976-1982	22.0	25.4	20.8	20.3	21.6
Expansions					
1976-1978	14.2	18.8	14.6	14.0	12.3
1978-1980	10.0	13.3	9.9	9.9	8.8
1980-1982	10.9	17.5	10.2	10.0	9.0
1976-1982	22.4	30.1	21.9	20.8	19.8
Shrinkages					
1976-1978	8.9	6.4	8.5	10.1	9.7
1978-1980	6.7	6.6	7.9	8.1	5.9
1980-1982	7.9	6.3	8.5	9.7	7.7
1976-1982	13.4	10.0	13.7	15.2	14.2
Net Changes**					
1976-1978	8.5	14.9	7.9	6.2	6.6
1978-1980	5.4	8.2	1.9	2.7	6.3
1980-1982	1.1	13.8	-0.7	-2.4	-2.1
1976-1982	15.6	29.3	13.1	10.7	12.2

If there were no such establishments at the start of the period, the startup rate is specified as 99.9 percent.

Adding net change to the base figure yields end year figures only in the "All Establishments--Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Table A1.21 *Changes in the Number of Establishments in All Industries in the U S by Employment Size of Firm*

	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Base Year					
1976	4,280,809	3,316,853	495,261	175,984	292,711
1978	4,416,874	3,333,349	546,735	210,469	326,321
1980	4,552,673	3,403,684	562,293	230,106	356,590
1982	4,723,718	3,625,383	544,495	212,785	341,056
Startups*					
	Percent				
1976-1978	19.6	19.3	14.9	22.8	28.9
1978-1980	11.9	11.9	8.6	11.7	18.1
1980-1982	15.1	15.6	11.0	14.4	17.2
1976-1982	40.0	39.1	34.6	49.1	54.2
Closures					
1976-1978	16.4	17.4	10.5	11.8	17.9
1978-1980	8.8	9.3	6.7	6.4	9.4
1980-1982	11.3	10.1	12.2	13.8	19.9
1976-1982	29.7	29.8	24.7	28.2	37.7
Expansions					
1976-1978	21.9	21.2	25.5	24.8	21.8
1978-1980	17.8	17.7	19.2	17.9	15.5
1980-1982	19.5	19.6	19.8	20.1	18.3
1976-1982	28.4	28.0	31.0	30.9	27.4
Shrinkages					
1976-1978	12.9	12.2	17.6	15.4	12.3
1978-1980	12.7	12.6	15.9	12.1	8.5
1980-1982	14.0	13.0	19.3	16.7	13.5
1976-1982	19.0	17.9	26.3	22.1	16.9
Net Changes**					
1976-1978	3.2	1.9	4.5	10.9	11.1
1978-1980	3.1	2.6	1.9	5.3	8.7
1980-1982	3.8	5.5	-1.2	0.6	-2.8
1976-1982	10.3	9.3	9.9	20.9	16.5

*If there were no such establishments at the start of the period, the startup rate is specific to 999.9 percent.

**Adding net change to the base figure yields end year figures only in the "All Establishments Total" column due to reclassification of establishments across firm employment and type categories in the next base year.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table A1.22 *Percent Change in Employment by Census Region and Employment Size of Firm, 1976-1978, 1978-1980 and 1980-1982*

Region	Employment Size of Firm						Total
	Total	0-19	20-99	< 100	100-499	≥ 500	
U.S. Total							
1976-1978	8.5	14.9	7.9	11.8	6.2	10.2	6.6
1978-1980	5.4	8.3	1.9	5.3	2.7	4.6	6.3
1980-1982	1.1	13.8	-0.7	7.1	-2.4	4.3	2.1
New England							
1976-1978	7.8	11.8	7.4	9.7	5.8	8.5	6.9
1978-1980	3.7	6.3	0.2	3.3	1.5	2.7	4.7
1980-1982	0.9	13.6	-1.4	6.3	-4.2	2.9	1.2
Middle Atlantic							
1976-1978	1.7	8.7	0.9	5.1	-0.7	3.4	0.2
1978-1980	1.9	5.3	-0.7	2.5	0.5	1.9	1.9
1980-1982	0.6	12.1	-0.7	6.2	-2.4	3.6	2.5
East North Central							
1976-1978	6.8	12.2	7.5	10.0	6.3	9.0	4.8
1978-1980	2.6	4.2	-0.5	2.0	1.0	1.7	3.4
1980-1982	-2.8	7.2	-4.4	1.6	-4.9	-0.3	-4.9
West North Central							
1976-1978	10.0	11.6	9.6	10.8	8.7	10.3	9.7
1978-1980	5.2	5.0	2.1	3.8	3.4	3.7	7.1
1980-1982	-0.1	7.1	-3.6	2.5	-3.7	0.8	3.1
South Atlantic							
1976-1978	9.0	15.7	7.4	11.9	7.1	10.5	7.4
1978-1980	5.9	9.8	3.2	6.7	2.7	5.6	6.3
1980-1982	1.8	16.9	0.9	9.4	-2.6	5.8	-2.3
East South Central							
1976-1978	7.8	10.4	9.2	9.9	8.5	9.5	6.2
1978-1980	5.2	4.4	1.7	3.2	3.6	3.3	7.0
1980-1982	-1.9	8.5	-2.7	3.5	-4.2	1.1	-4.5
West South Central							
1976-1978	14.3	19.5	12.5	16.4	8.0	14.2	14.4
1978-1980	10.6	12.0	6.1	9.3	6.4	8.5	12.8
1980-1982	6.6	22.4	6.5	15.1	3.5	11.7	1.4
Mountain							
1976-1978	19.5	22.9	14.4	19.4	16.2	18.7	20.6
1978-1980	11.5	14.1	4.4	9.9	5.9	9.0	14.4
1980-1982	4.3	20.0	1.3	11.9	-1.3	8.5	0.2
Pacific							
1976-1978	12.3	25.3	12.4	19.5	9.9	17.0	7.0
1978-1980	8.9	14.6	3.8	9.6	4.6	8.2	9.6
1980-1982	3.4	17.8	-0.8	9.2	-1.4	6.2	0.2

1. 1976-1982 changes can be found in this appendix, Table A1.18

2. U.S. Small Business Administration, Office of Advocacy, Small Business, 1981, Basic published data.

Percentage change from establishment closures, and job loss from shrinking establishments are also presented. These establishment and employment data are arrayed in Table A1.21 for each major industry division for various firm size categories.

Analysis of job growth for a particular industry, such as manufacturing, reveals a net percentage change of 5.0 percent for total employment in manufacturing for the 1978-1980 period. This can be derived from Table A1.21 data as follows.

$$\begin{aligned} 1980 \text{ employment} &= 24,497,093 \\ 1978 \text{ employment} &= \underline{23,334,212} \\ \text{difference} &= 1,162,881 \\ \text{Percentage difference} &= 5.0 \text{ percent} \end{aligned}$$

However, a similar calculation for firms with fewer than 20 employees may not lead to the result found in Table A1.21. For example, the net percentage change for firms with fewer than 20 employees in Table A1.21 is 14.9 percent from 1978 to 1980. This is not equal to the 1980 employment less 1978 employment divided by 1978 employment for the under-20 category. The reason for the difference is that the firm size category does not remain constant over time, e.g., a firm with 18 employees in 1978 included in the under-20 base year column may have had 25 employees in 1980, placing it in the 20-99 column for 1980. The same firm may have 102 employees by 1982. Consequently, its employment total would be included in establishments in the 100-499 employee category in 1982.

The 14.9-percent net change calculation for the 1978-1980 period for firms with fewer than 20 employees is based on maintaining the firm size category of each establishment at the 1978 level before calculating changes in employment or establishments. All percentage growth calculations included in this appendix maintain the firm size category of establishments at the level of the beginning year of the growth period.

The users of these longitudinal data tabulations should be aware of the shifting of establishments among the firm size categories and should take this into account when using the data.

Users of the SBDB should also note that dynamic growth, as shown in Table 1.9, may be misunderstood unless careful consideration is given to the period being considered. Refer to the all-industry establishment em-

Table A1.23 *Percent Change in Employment by Industry Division and Employment Size of Firm, Selected Time Periods*

Industry Division	Employment Size of Firm				
	Total	<20	20-99	100-199	500 +
All Industries					
1976-1982	15.6	29.3	13.1	10.7	12.2
1976-1978	8.5	14.9	7.9	6.2	6.6
1978-1980	5.4	8.3	1.9	2.7	6.3
1980-1982	1.1	13.8	-0.7	-2.4	-2.1
Agriculture, Forestry & Fishing					
1976-1982	4.9	21.8	-7.7	-10.9	-13.8
1976-1978	4.3	13.0	-1.6	-4.5	-5.5
1978-1980	-2.7	1.8	-11.2	-10.4	2.8
1980-1982	3.4	16.3	-3.3	-7.9	-15.2
Mining					
1976-1982	37.6	72.1	52.3	59.2	24.1
1976-1978	13.1	28.4	19.3	20.3	7.6
1978-1980	9.8	21.1	8.2	9.5	8.1
1980-1982	10.8	47.2	17.4	6.9	3.9
Construction					
1976-1982	7.9	24.8	-2.1	-14.1	-1.4
1976-1978	7.9	17.3	0.3	-5.1	6.8
1978-1980	1.0	6.3	-2.6	-1.1	-4.5
1980-1982	-1.1	11.6	-9.2	-13.9	-8.2
Manufacturing					
1976-1982	5.3	42.7	10.7	2.1	1.1
1976-1978	6.5	24.8	8.9	5.8	4.2
1978-1980	5.0	14.9	3.0	1.4	5.2
1980-1982	-5.8	15.6	-2.2	-7.1	-8.2
Transportation, Communications & Utilities					
1976-1982	13.0	33.9	11.4	8.1	10.3
1976-1978	5.4	14.2	5.4	4.3	4.0
1978-1980	6.6	11.3	3.6	2.2	7.0
1980-1982	0.6	18.9	0.8	-3.4	-1.6
Wholesale Trade					
1976-1982	15.2	28.8	8.2	12.7	4.7
1976-1978	8.9	13.7	5.4	6.1	7.0
1978-1980	5.2	8.1	2.2	4.4	4.8
1980-1982	0.5	11.0	-2.6	-3.3	-7.3
Retail Trade					
1976-1982	15.6	9.5	10.7	20.4	24.6
1976-1978	8.1	4.6	8.5	9.5	11.5
1978-1980	5.3	3.2	0.6	5.8	10.4
1980-1982	1.6	6.0	-2.2	-0.8	0.6

Table A1.23 *Percent Change in Employment by Industry Division and Employment Size of Firm, Selected Time Periods—Continued*

Industry Division	Employment Size of Firm				
	Total	< 20	20-99	100-499	500 +
Finance, Insurance & Real Estate					
1976-1982	19.3	46.6	14.3	7.6	13.9
1976-1978	7.0	25.1	5.6	4.2	1.2
1978-1980	3.8	11.2	-0.1	-0.2	3.3
1980-1982	7.5	21.2	1.9	-0.7	6.5
Services					
1976-1982	29.3	52.6	26.2	19.6	26.2
1976-1978	12.4	23.3	12.2	8.1	10.6
1978-1980	7.4	13.0	4.8	4.0	7.7
1980-1982	7.0	22.4	5.2	3.0	4.3

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

ployment table in A1.21. Note the net changes shown in the lower left-hand corner of the table for the total category. For example, the growth identified for the 1976-1982 period, 15.6 percent, is not equal to the sum of the growth rates for the three two-year periods ($8.5 + 5.4 + 1.1 = 15.0$, not 15.6). The data for each time period actually answer different questions.

The 1976-1982 information identifies job creation by establishments in the data file in 1976, and still existing in 1982, plus job creation by establishments entering the file between 1976 and 1982, and still existing in 1982. Establishments born in 1977 and dying in 1981 would not appear in the 1976-1982 file. However, the 1977 birth would generate an increase in growth if 1976-1978 was the period being examined, a possible increase, decrease, or no-change observation in the 1978-1980 period, and a decrease in employment, if 1980-1982 were the period under examination. Other cases can be identified that would have differential effects on net job growth depending on the length of the time examined.

It appears that growth rates measured over longer time periods will generally exceed the sum of the employment growth rate measured over shorter, intermediate periods. One possible explanation is that death rates for establishments are highest during the earliest years of operation but decline in later years. Establishments surviving the first two years are more likely to survive—and continue to grow—when growth is measured over a longer period.

Measuring growth over a shorter period, such as two years, produces lower growth because many new births of establishments are offset by early deaths, and surviving establishments have a shorter time to grow.

The conclusion to be drawn from these complex examples is that dynamic growth calculations, such as those shown in Table 1.9, represent a powerful new tool. Like any new tool, careful experimentation and extended use may be necessary before full benefit can be obtained from its use.

Appendix Table A1.24 data can be derived from the state employment and establishment data presented in Table A1.20. For example, to calculate a percentage found in Table A1.24 for the total category of size of firm, the difference in employment is calculated in the final year, and in the base year the difference is divided by the base-year employment. Employment numbers are found in Table A1.20.

Example: For Alabama

$$\begin{aligned} 1982 \text{ employment} &= 1,133,648 \\ 1976 \text{ employment} &= 1,086,779 \\ \text{difference} &= 46,869 \\ (46,869/1,086,779) \\ &\times 100 = 4.3 \text{ percent job growth} \end{aligned}$$

Again, as in Table A1.21, in order to compute job generation for firms with fewer than 19 employees, it is necessary to know the year-end employment based on the beginning year's size category. A firm that had 18 employees in 1976 may have had 39 employees in 1982. Basic data for this size category detail of job generation at the state level are not included in this appendix, but are available from the SBA's Office of Advocacy.

Table A1.24 Percent Change in Employment by Region and State, Selected Time Periods

Region/State	1976-1982	Rank	1976-1978	Rank	1978-1980	Rank	1980-1982	Rank
Region I								
Connecticut	15.2	31	12.2	19	4.2	35	-1.5	36
Maine	10.3	39	9.5	30	3.5	40	-2.6	45
Massachusetts	11.9	36	5.2	42	2.5	39	2.4	11
New Hampshire	22.8	11	10.4	15	4.6	32	2.8	12
Rhode Island	2.1	51	2.2	48	2.5	43	-2.9	43
Vermont	1.1	45	1.5	24	2.2	41	1.3	41
Region II								
New York	1.1	41	2.2	41	1.2	40	1.1	37
New Jersey	1.1	41	1.1	41	1.1	41	1.5	33
Region III								
Delaware	1.1	41	1.1	41	1.1	41	1.1	37
Pennsylvania	1.1	41	1.1	41	1.1	41	1.1	37
Virginia	1.1	41	1.1	41	1.1	41	1.1	37
Washington	1.1	41	1.1	41	1.1	41	1.1	37
West Virginia	1.1	41	1.1	41	1.1	41	1.1	37
Region IV								
Alabama	1.1	41	1.1	41	1.1	41	1.1	37
Arkansas	1.1	41	1.1	41	1.1	41	1.1	37
Florida	1.1	41	1.1	41	1.1	41	1.1	37
Georgia	1.1	41	1.1	41	1.1	41	1.1	37
Illinois	1.1	41	1.1	41	1.1	41	1.1	37
Indiana	1.1	41	1.1	41	1.1	41	1.1	37
Iowa	1.1	41	1.1	41	1.1	41	1.1	37
Kansas	1.1	41	1.1	41	1.1	41	1.1	37
Michigan	1.1	41	1.1	41	1.1	41	1.1	37
Minnesota	1.1	41	1.1	41	1.1	41	1.1	37
Mississippi	1.1	41	1.1	41	1.1	41	1.1	37
Missouri	1.1	41	1.1	41	1.1	41	1.1	37
Montana	1.1	41	1.1	41	1.1	41	1.1	37
Nebraska	1.1	41	1.1	41	1.1	41	1.1	37
Nevada	1.1	41	1.1	41	1.1	41	1.1	37
New Mexico	1.1	41	1.1	41	1.1	41	1.1	37
North Carolina	1.1	41	1.1	41	1.1	41	1.1	37
North Dakota	1.1	41	1.1	41	1.1	41	1.1	37
Ohio	1.1	41	1.1	41	1.1	41	1.1	37
Oklahoma	1.1	41	1.1	41	1.1	41	1.1	37
Oregon	1.1	41	1.1	41	1.1	41	1.1	37
South Carolina	1.1	41	1.1	41	1.1	41	1.1	37
South Dakota	1.1	41	1.1	41	1.1	41	1.1	37
Tennessee	1.1	41	1.1	41	1.1	41	1.1	37
Texas	1.1	41	1.1	41	1.1	41	1.1	37
Utah	1.1	41	1.1	41	1.1	41	1.1	37
Washington	1.1	41	1.1	41	1.1	41	1.1	37
West Virginia	1.1	41	1.1	41	1.1	41	1.1	37
Wisconsin	1.1	41	1.1	41	1.1	41	1.1	37
Wyoming	1.1	41	1.1	41	1.1	41	1.1	37

Table A1.24 *Percent Change in Employment by Region and State, Selected Time Periods—Continued*

Region/State	1976–1982	Rank	1976–1978	Rank	1978–1980	Rank	1980–1982	Rank
Region V								
Illinois	5.4	42	4.1	45	3.7	38	-2.4	42
Indiana	3.2	48	8.2	34	0.8	49	-5.4	49
Michigan	7.4	41	8.3	33	1.0	48	-1.8	37
Minnesota	19.4	22	9.3	31	7.0	17	2.1	15
Ohio	5.0	43	6.8	41	1.7	46	-3.3	48
Wisconsin	15.6	28	10.2	27	6.3	20	-1.4	35
Region VI								
Arkansas	15.5	29	11.8	20	5.5	24	-2.1	40
Louisiana	28.9	12	14.1	14	10.1	10	2.6	13
New Mexico	46.5	3	31.1	3	12.0	6	-0.3	28
Oklahoma	35.4	8	14.9	10	9.5	11	7.6	3
Texas	38.7	7	14.6	11	11.6	7	8.5	2
Region VII								
Iowa	4.2	46	4.7	44	2.2	44	-2.6	46
Kansas	22.1	17	14.5	12	6.9	18	-0.2	26
Missouri	15.3	30	10.5	26	5.2	29	-0.8	33
Nebraska	15.2	32	11.0	23	2.8	42	0.9	22

Region VIII									
Colorado	32.5	10	13.6	16	9.4	12	6.6	6	
Montana	17.3	23	14.4	13	9.1	14	-6.0	51	
North Dakota	22.7	15	15.3	8	4.4	33	2.0	16	
South Dakota	20.4	19	13.0	17	8.9	16	-2.1	39	
Utah	54.0	2	32.4	2	12.2	5	3.7	10	
Wyoming	62.4	1	36.1	1	13.8	3	4.9	8	
Region IX									
Arizona	41.3	4	15.2	9	14.7	1	7.0	4	
California	28.0	13	12.6	18	8.9	15	4.5	9	
Hawaii	22.2	16	11.3	21	9.3	13	0.5	23	
Nevada	41.1	5	15.4	7	14.6	2	6.7	5	
Region X									
Alaska	40.4	6	1.1	49	13.1	24	22.8	1	
Idaho	33.4	9	25.7	4	6.8	19	-0.7	31	
Oregon	19.5	21	16.0	6	5.7	22	-2.6	44	
Washington	21.0	18	9.8	28	10.6	8	-0.3	29	

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Table A1.25 *Change in Employment by Employment Size of Firm, Selected Time Periods*

	Total Employment in Each Size Class, 1976						
	Total	1-19	20-99	< 100	100-499	< 500	500 +
	75,961,361	15,597,190	12,824,160	28,431,350	10,866,048	39,297,398	36,663,964
	Employment Growth Attributable to Each Size Class						
1976-1982	11,870,978	4,574,771	1,676,366	6,251,137	1,160,561	7,411,098	4,459,280
1976-1980	10,891,982	3,174,586	1,460,752	4,635,338	1,150,839	5,786,177	5,105,805
1976-1978	6,426,986	2,330,431	1,016,655	3,347,086	672,292	4,019,378	2,407,608
1978-1980	4,464,996	1,336,217	263,821	1,600,038	326,114	1,926,152	253,814
1980-1982	978,997	2,276,800	-95,546	2,181,254	-307,729	1,873,525	-894,526
1982-1984 ¹	6,302,000						

Employment Growth Attributable to Each Size Class

¹November 1982-October 1984 change from U. S. Department of Commerce, Bureau of the Census, Current Population Survey, November 1984

Source: U. S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Table A1.26 *Employment and Employment Change for Selected Small Business-Dominated Industries, October 1982–October 1984*

SIC Code	Industry	October		Percent Change
		1982	1984	1982–1984
		(Thousands)		
	Total, Small Business-Dominated	29,587.1	32,959.5	11.4
	Construction	2,895.1	3,442.8	18.9
152	Residential Building Contractors	465.1	569.3	22.4
153	Operative Builders	46.1	64.1	39.0
154	Nonresidential Building Contractors	501.5	562.5	12.2
161	Highway & Street Construction	254.1	294.8	16.0
171	Plumbing, Heating, & Air Conditioning	499.6	563.8	12.9
172	Painting, Paper Hanging, & Decorating	129.8	162.1	24.9
173	Electrical Work	408.2	466.4	14.3
174	Masonry, Stonework, & Plastering	317.7	414.3	30.4
175	Carpentry & Flooring	105.9	139.2	31.4
176	Roofing & Sheet Metal Work	167.1	206.3	23.5
	Transportation, Communications & Public Utilities	1,688.2	1,869.9	10.8
412	Taxicabs	40.5	37.7	-6.9
413	Intercity Highway Transportation	37.5	38.8	3.5
415	School Buses	95.6	101.0	5.6
421, 3	Trucking Terminal Facilities	1,135.5	1,257.4	10.7
422	Public Warehousing	89.3	99.0	10.9
46	Pipe Line, except Natural Gas	21.9	20.8	-5.0
47	Transportation Services	216.7	259.4	19.7
495	Sanitary Services	51.2	55.8	9.0
	Wholesale Trade	4,810.3	5,175.9	7.6
501	Motor Vehicles & Automobile Equipment	401.9	422.6	5.2
502	Furniture & Home Furnishings	113.4	122.8	8.3
503	Lumber & Construction Materials	179.4	207.3	15.6
504	Sporting Goods, Toys, & Hobby Goods	72.3	73.2	1.2
506	Electrical Goods	426.8	475.5	11.4
507	Hardware, Plastering & Heating Equip.	234.7	250.5	6.7
508	Machinery, Equipment & Supplies	1,315.2	1,428.8	8.6
509	Miscellaneous Durable Goods	172.8	197.3	14.2
511	Paper & Paper Products	158.6	175.0	10.3
513	Apparel, Piece Goods & Notions	171.4	178.6	4.2
514	Groceries & Related Products	671.1	734.0	9.4
516	Chemicals & Allied Products	132.9	128.0	-3.7
517	Petroleum & Petroleum Products	220.5	207.0	-6.0
518	Beer, Wine, & Distilled Beverages	145.0	154.7	6.7
519	Miscellaneous Non-Durable Goods	394.3	420.6	6.7

Table A1.26 *Employment and Employment Change for Selected Small Business-Dominated Industries, October 1982–October 1984—Continued*

SIC Code	Industry	October		Percent Change
		1982 (Thousands)	1984	1982–1984
	Retail Trade	9,981.7	10,970.0	9.9
521	Lumber & Other Building Materials	300.4	350.0	16.5
525	Hardware Stores	147.6	157.7	6.8
542	Meat Markets & Freezer Provisioners	57.1	58.5	2.5
546	Retail Bakeries	130.9	155.0	18.4
551,2	New & Used Car Dealers	736.1	829.9	12.7
553	Auto & Home Supply Stores	260.2	287.4	10.5
554	Gasoline Service Stations	539.6	574.5	6.5
562	Women's Ready-to-Wear Stores	339.8	360.9	6.2
565	Family Clothing Stores	172.2	183.4	6.5
571	Furniture & Home Furnishings	345.0	386.7	12.2
572	Household Appliance Stores	75.6	82.1	–4.6
573	Radio, TV, & Miscellaneous Stores	155.3	203.1	30.8
58	Eating & Drinking Places	4,862.4	5,302.6	9.1
591	Drug Stores & Proprietary Stores	488.4	550.7	12.8
592	Liquor Stores	127.6	122.9	–3.7
594	Miscellaneous Shopping Goods Stores	623.8	692.1	10.9
596	Non-stores Retailers	257.2	268.9	4.5
598	Fuel & Ice Dealers	100.5	108.4	7.9
599	Retail Stores, nec	262.0	295.2	12.7
	Finance, Insurance & Real Estate	1,668.8	1,880.4	12.7
612	Savings & Loan Associations	224.0	319.4	42.6
64	Insurance Agents, Brokers, & Services	475.4	519.6	9.3
651	Real Estate Operators & Lessors	482.0	496.1	2.9
653	Real Estate Agents & Managers	353.3	396.7	12.3
655	Subdividers & Developers	116.3	132.2	13.7
66	Combined Real Estate, Insurance Offices	17.8	16.4	–7.9
	Services	8,543.1	9,620.2	12.6
701	Hotels, Motels, & Tourist Courts	1,061.1	1,249.0	17.7
721	Laundry, Cleaning & Garment Services	347.4	363.5	4.6
723	Beauty Shops	286.9	327.3	14.1
726	Funeral Services & Crematories	71.1	73.9	3.9
731	Advertising	162.3	178.9	10.2
732	Credit Reporting & Collecting	74.6	81.1	8.7
733	Mail, Reproduction, & Stenographic	135.8	166.6	22.7
737	Computer & Data Processing Services	366.7	487.2	32.9
753	Automotive Repair Shops	363.3	428.8	18.0
76	Miscellaneous Repair Shops	278.4	314.2	12.9
794	Amusement & Recreation Services	773.6	785.6	1.6
8011	Offices of Physicians	834.9	919.6	10.1

Table A1.26 *Employment and Employment Changes for Selected Small Business Dominated Industries, October 1982--October 1984* (Continued)

		October		Percent Change	
SIC		1982	1984	1982	1984
Code	Industry	(Thousands)			
Services (continued)					
802	Offices of Dentists	389.7	438.0	12.4	
805	Nursing & Personal Care Facilities	1,075.6	1,166.0	8.4	
81	Legal Services	573.6	659.7	15.0	
83	Social Services	1,181.0	1,344.4	14.8	
891	Engineering & Architectural Services	567.1	636.4	12.2	

Note: Excludes self-employed. October 1984 data are preliminary.

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy, from the U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, December 1984 and unpublished October 1984 data to be printed in the December 1984 edition of the *Employment and Earnings*, Table B-2. In this table, small business dominated industries contain a minimum of 60 percent of their employment and/or sales in firms with under 500 employees. The distribution of employment by firm size class is from the Small Business Data Base of the U.S. Small Business Administration, Office of Advocacy. BLS does not routinely publish detailed industry information for small business dominated industries in the mining and manufacturing industries.

Table A1.27 *Employment and Employment Change for Selected Large Business-Dominated Industries, October 1982–October 1984*

SIC Code	Industry	October		Percent Change
		1982 (Thousands)	1984	1982–1984
	Total, Large Business-Dominated	38,794.2	40,843.6	5.3
	Mining	1,077.0	1,016.0	–5.7
	Construction	635.6	567.6	–10.7
162	Heavy Construction, except Highway	635.6	567.6	–10.7
	Manufacturing	18,503.5	19,838.0	7.2
20	Food & Kindred Products	1,696.2	1,688.5	–0.5
21	Tobacco Manufactures	70.2	73.4	4.6
22	Textile Mill Products	737.8	741.6	0.5
23	Apparel & Other Textile Products	1,164.1	1,196.2	2.8
24	Lumber & Wood Products	614.1	724.5	18.0
25	Furniture & Fixtures	430.9	491.0	13.9
26	Paper & Allied Products	654.2	685.9	4.8
27	Printing & Publishing	1,263.1	1,377.8	9.1
28	Chemicals & Allied Products	1,064.3	1,062.2	–0.2
29	Petroleum & Coal Products	203.0	187.3	–7.7
30	Rubber & Misc. Plastics Products	693.1	810.1	16.9
31	Leather & Leather Products	219.4	196.2	–10.6
32	Stone, Clay, & Glass Products	576.1	620.9	7.8
33	Primary Metal Industries	832.8	862.6	3.6
34	Fabricated Metal Products	1,386.1	1,504.9	8.6
35	Machinery, except Electrical	2,114.2	2,251.1	6.5
36	Electric & Electronic Equipment	1,985.1	2,275.8	14.6
37	Transportation Equipment	1,705.9	1,958.2	14.8
38	Instruments & Related Products	704.1	729.5	3.6
39	Misc. Manufacturing Industries	388.8	400.5	3.0
	Transportation, Communications & Public Utilities	3,163.5	3,131.1	–1.0
40	Railroad Transportation	415.4	377.0	–9.2
41	Local & Suburban Transportation	85.2	81.3	–4.6
44	Water Transportation	195.5	226.2	15.7
451,2	Air Transportation	394.7	431.1	9.2
481	Telephone Communications	1,050.7	973.3	–7.4
483	Radio & Television Broadcasting	223.0	230.6	3.4
491	Electric Services	425.0	442.4	4.1
492	Gas Production & Distribution	176.6	171.0	–3.2
493	Combination Utility Services	197.4	198.2	0.4
	Wholesale Trade	289.3	290.3	0.3
505	Metal & Minerals, except Petroleum	134.5	134.0	–0.4
12	Drugs, Proprietors, & Subsidiaries	154.8	156.3	1.0

Table A1.27 *Employment and Employment Change for Selected Large Business-Dominated Industries, October 1982–October 1984* (Continued)

SIC Code	Industry	October		Percent change	
		1982	1984	1982	1984
		(Thousands)			
	Retail Trade	4,680.7	5,033.5		7.5
531	Department Stores	1,853.0	2,010.5		8.5
533	Variety Stores	225.9	216.8		-4.0
539	Misc. General Merch. Stores	115.4	132.4		14.7
541	Grocery Stores	2,171.2	2,351.2		8.3
561	Men's & Boys' Clothing & Furnishings	116.9	113.9		-2.6
566	Shoe Stores	198.3	208.2		5.2
	Finance, Insurance & Real Estate	3,076.3	3,197.6		3.9
602	Commercial & Stock Savings Bank	1,492.8	1,534.0		2.4
614	Personnel Credit Institution	193.5	214.3		10.7
621	Security Brokers & Dealers	224.0	283.1		26.5
631	Life Insurance	544.6	535.9		-1.6
632	Medical Services & Health Insurance	142.2	156.9		10.3
633	Fire Insurance & Casualty Insurance	424.2	423.1		-0.3
	Services	7,367.5	7,769.5		5.5
734	Services to Buildings	523.0	629.4		20.3
736	Personnel Supply Services	583.0	878.6		50.7
781	Motion Picture Production & Services	82.7	104.2		26.6
783	Motion Picture Theaters	112.0	100.5		-10.3
806	Hospitals	3,032.5	2,974.5		-1.9
821	Elementary & Secondary Schools	328.0	359.3		9.5
822	Colleges & Universities	825.5	832.8		0.9
86	Membership Organizations	1,528.5	1,502.8		-1.7
893	Accounting, Auditing, & Bookkeeping	352.3	386.9		9.8

Note: Excludes self-employed. October 1984 data are preliminary.

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy, from the U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, December 1983 and unpublished October 1984 data to be printed in the December 1984 edition of *Employment and Earnings*, Table B-2. Small business-dominated industries contain a minimum of 60 percent of their employment and/or sales in firms with under 500 employees. The distribution of employment by firm size class is from the Small Business Data Base of the U.S. Small Business Administration, Office of Advocacy. BLS does not routinely publish detailed industry information for small business-dominated industries in mining and manufacturing industries.

SIC Code	Industry	October		Percent Change 1983-1984
		1983	1984	
	Total, Small Business Dominated	30,602.9	32,959.5	7.7
	Construction	3,098.2	3,442.8	11.1
152	Residential Building Contractors	529.2	569.3	7.6
153	Operative Builders	61.5	64.1	4.2
154	Nonresidential Building Contractors	516.6	562.5	8.9
161	Highway & Street Construction	267.5	294.8	10.2
171	Plumbing, Heating, & Air Conditioners	515.8	563.8	9.3
172	Painting, Paper Hanging, & Decorating	139.8	162.1	15.9
173	Electrical Work	413.6	466.4	12.8
174	Masonry, Stonework, & Plastering	355.6	414.3	16.5
175	Carpentry & Flooring	126.4	139.2	10.1
176	Roofing & Sheet Metal Work	172.2	206.3	19.8
	Transportation & Public Utilities	1,723.7	1,869.9	8.5
412	Taxicabs	38.9	37.7	-3.1
413	Intercity Highway Transportation	34.1	38.8	13.8
415	School Buses	97.8	101.0	3.3
421,3	Trucking Terminal Facilities	1,171.2	1,257.4	7.4
422	Public Warehousing	87.1	99.0	13.7
46	Pipe Line, except Natural Gas	21.7	20.8	-4.1
47	Transportation Services	220.7	259.4	17.5
495	Sanitary Services	52.2	55.8	6.9
	Wholesale Trade	4,868.7	5,176.2	6.3
501	Motor Vehicles & Automobile Equip	410.1	422.6	3.0
502	Furniture & Home Furnishings	116.7	122.8	5.2
503	Lumber & Construction Materials	197.0	207.3	5.2
504	Sporting Goods, Toys, & Hobby Goods	73.3	73.2	-0.1
506	Electrical Goods	439.0	475.5	8.3
507	Hardware, Plastering & Heating Equip	240.2	250.5	4.3
508	Machinery, Equipment & Supplies	1,319.9	1,428.8	8.3
509	Miscellaneous Durable Goods	181.8	197.3	8.5
511	Paper & Paper Products	164.3	175.0	6.5
513	Apparel, Piece Goods & Notions	171.5	178.6	4.1
514	Groceries & Related Products	666.2	734.0	10.2
516	Chemicals & Allied Products	135.6	128.0	-5.6
517	Petroleum & Petroleum Products	215.6	207.0	-4.0
518	Beer, Wine, & Distilled Beverages	146.8	154.7	5.4
519	Miscellaneous Non-Durable Goods	390.7	420.6	7.7

Table A1.28 *Employment & Employment Change for Selected Small Business-Dominated Industries, October 1983–October 1984 (Employment in Thousands)—Continued*

SIC Code	Industry	October		Percent Change
		1983	1984	1983–1984
	Retail Trade	10,175.1	10,970.0	7.8
521	Lumber & Other Building Materials	324.3	350.0	7.9
525	Hardware Stores	152.2	157.7	3.6
542	Meat Markets & Freezer Provisioners	59.7	58.5	–2.0
546	Retail Bakeries	135.8	155.0	14.1
551,2	New & Used Car Dealers	765.6	829.9	8.4
553	Auto & Home Supply Stores	264.3	287.4	8.7
554	Gasoline Service Stations	532.7	574.5	7.8
562	Women's Ready-to-Wear Stores	353.2	360.9	2.2
565	Family Clothing Stores	170.9	183.4	7.3
571	Furniture & Home Furnishings	359.8	386.7	7.5
572	Household Appliance Stores	77.7	82.1	5.7
573	Radio, TV, & Miscellaneous Stores	165.9	203.1	22.4
58	Eating & Drinking Places	4,918.7	5,302.6	7.8
591	Drug Stores & Proprietary Stores	491.2	550.7	12.1
592	Liquor Stores	126.7	122.9	–3.0
594	Miscellaneous Shopping Goods Stores	645.9	692.1	7.2
596	Non-stores Retailers	269.8	268.9	–0.3
598	Fuel & Ice Dealers	99.5	108.4	8.9
599	Retail Stores, nec	261.2	295.2	13.0
	Finance, Insurance & Real Estate	1,787.8	1,880.4	5.2
612	Savings & Loan Association	299.7	319.4	6.6
64	Insurance Agents, Brokers, & Services	481.4	519.6	7.9
651	Real Estate Operators & Lessors	505.3	496.1	–1.8
653	Real Estate Agents & Managers	363.5	396.7	9.1
655	Subdividers & Developers	121.4	132.2	9.0
66	Combined Real Estate, Insurance Offices	16.5	16.4	–0.6
	Services	8,949.4	9,620.2	7.5
701	Hotels, Motels, & Tourist Courts	1,091.7	1,249.0	14.4
721	Laundry, Cleaning & Garment Services	348.7	363.5	4.2
723	Beauty Shops	301.9	327.3	8.4
726	Funeral Services & Crematories	72.1	73.9	2.5
731	Advertising	168.0	178.9	6.5
732	Credit Reporting & Collecting	79.7	81.1	1.8
733	Mailing, Reproduction, & Stenographic	152.3	166.6	9.4
737	Computer & Data Processing Services	412.0	487.2	18.3
753	Automotive Repair Shops	366.9	428.8	16.9

SIC Code	Industry	October		Percent Change	
		1983	1984	1983	1984
Services (continued)					
76	Miscellaneous Repair Shops	276.6	314.2	13.6	
79	Amusement & Recreation Services	814.5	785.6	3.5	
801	Offices of Physicians	863.2	919.6	6.5	
802	Office of Dentists	415.4	438.0	5.4	
805	Nursing & Personal Care Facilities	1,108.3	1,166.0	5.2	
81	Legal Services	613.8	659.7	7.5	
83	Social Services	1,280.9	1,344.4	5.0	
891	Engineering & Architectural Services	583.4	636.4	9.1	

Note: Excludes self-employed. October 1984 data are preliminary.

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy from the U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, January 1984 and unpublished October 1984 data to be printed in the December 1984 edition of the *Employment and Earnings*, Table B-2. Small business-dominated industries contain a minimum of 60 percent of their employment and/or sales in firms with under 500 employees. The distribution of employment by firm size class is from the Small Business Data Base of the U.S. Small Business Administration, Office of Advocacy. BLS does not routinely publish detailed industry information that can be defined as small business-dominated industry information for the mining and manufacturing industry divisions.

Table A1.29 *Employment & Employment Change for Selected Large Business-Dominated Industries, October 1983 to October 1984 (Employment in Thousands)*

SIC Code	Industry	October		Percent Change
		1983	1984	1983-1984
	Total, Large Business-Dominated	39,742.3	40,843.6	2.8
	Mining	1,039.0	1,016.0	-2.2
	Construction	607.5	567.6	-6.6
162	Heavy Construction, except Highway	607.5	567.6	-6.6
	Manufacturing	19,216.0	19,838.0	3.2
20	Food & Kindred Products	1,688.0	1,688.5	0.1
21	Tobacco Manufactures	68.2	73.4	7.6
22	Textile Mill Products	763.9	741.6	-2.9
23	Apparel & Other Textile Products	1,208.1	1,196.2	-1.0
24	Lumber & Wood Products	722.2	724.5	0.3
25	Furniture & Fixtures	470.5	491.0	4.4
26	Paper & Allied Products	666.8	685.9	2.9
27	Printing & Publishing	1,295.4	1,377.8	6.4
28	Chemicals & Allied Products	1,059.0	1,062.2	0.3
29	Petroleum & Coal Products	195.9	187.3	-4.4
30	Rubber & Misc. Plastics Products	758.3	810.1	6.8
31	Leather & Leather Products	221.3	196.2	-11.3
32	Stone, Clay, & Glass Products	601.5	620.9	3.2
33	Primary Metal Industries	858.9	862.6	0.4
34	Fabricated Metal Products	1,438.6	1,504.9	4.6
35	Machinery, except Electrical	2,124.3	2,251.1	6.0
36	Electric & Electronic Equipment	2,115.8	2,275.8	7.6
37	Transportation Equipment	1,862.7	1,958.2	5.1
38	Instruments & Related Products	698.7	729.5	4.4
39	Misc. Manufacturing Industries	398.1	400.5	0.6
	Transportation & Public Utilities	3,094.3	3,131.1	1.2
40	Railroad Transportation	386.4	377.0	-2.4
411	Local & Suburban Transportation	87.7	81.3	-7.3
44	Water Transportation	184.1	226.2	22.9
451,2	Air Transportation	393.8	431.1	9.5
481	Telephone Communications	998.4	973.3	-2.5
483	Radio & Television Broadcasting	231.9	230.6	-0.6
491	Electric Services	434.6	442.4	1.8
492	Gas Production & Distribution	174.5	171.0	-2.0
493	Combination Utility Services	202.9	198.2	-2.3
	Wholesale Trade	285.3	290.3	1.8
505	Metal & Minerals, except Petroleum	131.8	134.0	1.7
512	Drugs, Proprietary, & Subsidiaries	153.5	156.3	1.8

Table A1.29 *Employment & Employment Change for Selected Large Business-Dominated Industries, October 1983 to October 1984 (Employment in Thousands)—Continued*

SIC Code	Industry	October		Percent Change
		1983	1984	1983-1984
	Retail Trade	4,759.2	5,033.5	5.8
531	Department Stores	1,905.5	2,010.5	5.5
533	Variety Stores	215.0	216.8	0.8
539	Misc. General Merch. Stores	117.0	132.4	13.2
541	Grocery Stores	2,205.1	2,351.2	6.6
561	Men's & Boys' Clothing & Furnishings	115.6	113.9	-1.5
566	Shoe Stores	201.0	208.7	3.8
	Finance, Insurance & Real Estate	3,111.9	3,197.6	2.8
602	Commercial & Stock Savings Bank	1,505.8	1,534.0	1.9
614	Personnel Credit Institution	196.9	214.3	8.8
621	Security Brokers & Dealers	259.2	283.4	9.3
631	Life Insurance	536.2	535.9	-0.1
632	Medical Services & Health Insurance	146.6	156.9	7.0
633	Fire Insurance & Casualty Insurance	467.2	473.1	1.3
	Services	7,629.1	7,769.5	1.8
734	Services to buildings	557.2	629.4	13.0
736	Personnel supply services	809.7	878.6	8.5
781	Motion Picture Production & Services	91.6	104.7	14.3
783	Motion Picture Theaters	106.4	100.5	-5.5
806	Hospitals	3,023.0	2,974.5	-1.6
821	Elementary & Secondary Schools	326.1	359.3	10.2
822	Colleges & Universities	833.1	832.8	-0.1
86	Membership Organizations	1,520.3	1,502.8	-1.2
893	Accounting, Auditors & Bookkeeping	361.7	386.9	7.0

Note: Excludes self-employed. October 1984 data are preliminary.

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy from the U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, January 1984 and unpublished October 1984 data to be printed in the December 1984 edition of the *Employment and Earnings*, Table B-2. Small business-dominated industries contain a minimum of 60 percent of their employment and/or sales in firms with under 500 employees. The distribution of employment by firm size class is from the Small Business Data Base of the U.S. Small Business Administration, Office of Advocacy. BLS does not routinely publish detailed industry information that can be defined as small business-dominated industry information for the mining and manufacturing industry divisions.

Table A1.30 *Change in the Number of Bankruptcies by Region and State, Selected Time Periods*

Region/State	July-December 1982	January-June 1983	July-December 1983	January-June 1984	Percent Change January-June 1983 to January-June 1984
U.S. Total	36,018	32,951	25,378	32,906	-0.1
Region I, Total	1,012	903	696	746	-17.4
Connecticut	246	247	189	177	-28.3
Maine	138	112	85	97	-13.4
Massachusetts	330	281	240	285	1.4
New Hampshire	112	112	63	61	-45.5
Rhode Island	120	92	72	75	-18.5
Vermont	66	59	47	51	-13.6
Region II, Total	2,468	1,993	1,701	2,087	4.7
New Jersey	751	365	339	695	90.4
New York	1,717	1,628	1,362	1,392	-14.5
Region III, Total	2,395	2,328	1,610	2,070	-11.1
Delaware	34	31	38	32	3.2
District of Columbia	40	49	43	50	2.0
Maryland	217	286	121	235	-17.8
Pennsylvania	1,002	926	610	835	-9.8
Virginia	876	804	613	692	-13.9
West Virginia	226	232	185	226	-2.6

Table A1.30 Change in the Number of Bankruptcies by Region and State Selected Time Periods—Continued

Region/State	July-December 1982	January-June 1983	July-December 1983	January-June 1984	July-December 1984
Region IV, Total	5,149	4,324	3,071	4,420	2.2
Alabama	611	426	111	426	-
Florida	1,004	792	516	426	-
Georgia	1,063	841	578	426	-
Kentucky	571	503	231	426	-
Mississippi	263	231	154	426	-
North Carolina	465	492	325	436	-11.5
South Carolina	166	151	134	119	-21.2
Tennessee	1,006	922	787	733	-20.5
Region V, Total	6,782	6,263	5,824	6,355	1.5
Illinois	1,831	1,904	1,736	1,866	-2.0
Indiana	847	675	602	649	-1.9
Michigan	899	837	791	886	-2.1
Minnesota	787	719	642	771	-
Ohio					

Region VII, Total	2,290	2,002	1,226	2,611	30.4
Iowa	657	699	646	895	28.0
Kansas	405	210	110	475	126.2
Missouri	900	747	276	892	19.4
Nebraska	328	346	194	349	0.9
Region VIII, Total	2,247	1,787	742	2,203	23.3
Colorado	1,031	519	168	1,032	98.8
Montana	119	170	102	115	-32.4
North Dakota	168	208	154	178	-14.4
South Dakota	210	249	34	123	-50.6
Utah	576	455	102	541	18.9
Wyoming	143	186	182	214	15.1
Region IX, Total	7,949	7,833	6,006	6,297	-19.6
Arizona	693	789	673	704	-10.8
California	6,784	6,609	4,914	5,205	-21.2
Hawaii	128	138	137	112	-18.8
Nevada	344	297	282	276	-7.1
Region X, Total	2,124	1,863	1,186	2,074	11.3
Alaska	113	73	79	104	42.5
Idaho	232	341	266	343	0.6
Oregon	826	786	547	770	-2.0
Washington	953	663	294	857	29.3

Source: Adapted by the U.S. Small Business Administration, Office of Advocacy, from the Administrative Office of the U.S. Courts, Statistical Analysis and Reporting Division, unpublished data.

Chapter 2

Industrial Strategies and Small Firms

Synopsis

To sustain economic progress, some policymakers are seeking to influence the industry mix of the U.S. economy through government interventions—or industrial policy—designed to redistribute resources directly to selected industries and indirectly to specific firms. Current economic policy debates include discussions of the long-term performance of the manufacturing sector and specific manufacturing industries.

The arguments in support of industrial policy ignore the changes that are already occurring within industries, particularly in the traditional and high-technology manufacturing industries. Across industries, small businesses are responding to the long-term structural changes in the economy. Through entrepreneurship, expansion, and innovations, small businesses are redistributing resources within and among industries through existing market mechanisms.

Instead of analyzing these changes by firm size, industrial policy proponents are emphasizing the declining relative share of employment in the manufacturing sector. Instead of viewing this structural shift as a manifestation of improved productivity and an adjustment to the increased consumer demand for services, they maintain that the declining share is an adverse trend that must be reversed in order to sustain economic progress.

However, the experience of other industrialized nations that have adopted industrial policies indicates that the overall employment in these nations has not continuously fared as well as employment in the United States, which has no explicit industrial policy. These industrial policies appear to have deflected resources away from small businesses and, consequently, have impeded the job generation capabilities of small firms.

Introduction

Small business is the sector of the economy that responds most readily to structural change. Through entrepreneurship, innovation, formation and expansion, small businesses are directing and redistributing resources. Despite these contributions, current economic policy discussions on industrial policy and industrial competitiveness are focusing on overall industrial performance without cred-

change within industries.

Government policies that relate to industries are here termed industrial strategies; industrial policy is defined as a specific, limited subset of all industrial strategies which may be adopted by government policymakers. Generally, industrial policy, as proposed, would protect declining industries or promote selected high-technology industries at the expense of small businesses. By diverting resources from small firms, it would impede the economy's adjustment to structural shifts.

Policymakers are concentrating on various macro and micro strategies that emphasize a mix by industry rather than by firm size to ensure economic progress in the United States. Policies should instead create an economic environment that does not inhibit the growth of small businesses, which provide the impetus for industrial change.

Many of the arguments favoring the formation of industrial policy focus on the traditional (smokestack, basic, or mature) and new high-technology manufacturing industries. Within these industries, however, small firms are redistributing resources through existing market mechanisms, by increasing the number of small firms, expanding employment, and introducing innovations. Small businesses are therefore an important component of the process of economic growth. Any discussion of proposed industrial policies must examine this crucial contribution of the small business sector.

Assessing the impact of foreign industrial policies is another way to determine whether industrial policy benefits small business, improves employment opportunities, or promotes economic growth. The foreign experience with industrial policy shows that limited strategies aimed at helping specific industries are likely to cause distributive problems that impede, rather than foster, small business growth and economic progress.

**Manufacturing
in the U.S.
Industrial Base:
Recent Evidence**

In Washington and in the media, current debates on jobs, regional unemployment, and human resource development have sparked discussion on industrial policy proposals. Other economic policy debates address the performance of U.S. products and firms in international markets; remedial proposals designed to influence global markets are called industrial competitiveness proposals. These perspectives converge on the issue of structural change in the U.S. economy, particularly on current de-

Table 2.1 *Size and Share of the Manufacturing Sector, Selected Years 1950-1980*

	Manufacturing			Percentage Share of Total		
	Output (Billions of 1972 Dollars)	Employ- ment (Millions)	Capital Stock (Billions of 1972 Dollars)	Output	Employ- ment	Capital Stock
1950	131.1	15.2	106.4	24.5	33.7	28.4
1960	171.8	16.8	140.4	23.3	31.0	25.8
1970	261.2	19.4	202.2	24.1	27.3	23.5
1980	351.0	20.3	287.0	23.8	22.4	23.4

Source: U.S. Department of Commerce, Bureau of Economic Analysis, and U.S. Department of Labor, Bureau of Labor Statistics, as cited in the *Economic Report of the President, February 1984* (Washington, D.C.: U.S. Government Printing Office, 1984), p. 89.

developments in manufacturing. Both types of proposals focus on the alleged declining performance of the U.S. manufacturing sector; both assume a decline because of structural changes that threaten to permanently reduce the size of most manufacturing industries.

No distinction is drawn here between industrial proposals focused on the domestic versus international performance of manufacturing industries. The definition adopted is that industrial policy is any explicit intervention by the Federal Government to affect the distribution of resources to firms in specific industries, or to create conditions that otherwise would affect the competitive abilities of these firms and industries.

Has "Deindustrialization" Occurred?

Arguments favoring industrial policy assume that the basic industries are becoming deindustrialized, i.e., that the United States is experiencing a long-term decline in manufacturing which must be reversed, if economic growth is to be sustained. Available evidence on the historical performance of manufacturing does not support this assertion. Rather, recent data suggest that the manufacturing sector is growing more slowly in output, employment, and capital stock than other sectors of the U.S. economy. These slower growth rates are reflected as decreases in the relative shares of manufacturing in employment and capital stock (Table 2.1).

Manufacturing real output, as measured in constant 1972 dollars, expanded by 170 percent from \$131 billion in 1950 to \$351 billion in 1980. Net capital stock in manufacturing grew at the same rate, up 170 percent,

from \$106 billion to \$287 billion (1972 dollars) over the 30-year period. Employment growth in manufacturing, however, was much lower, increasing 34 percent, from 15 million workers in 1950 to over 20 million workers in 1980.

The stability in output share, slight decline in capital stock share, but greater decline in employment share, are attributable to labor-saving technological advances that have increased worker productivity by doubling the ratio of capital stock per employee. Manufacturing output as a percent of total U.S. output remained fairly stable in the 1950-1980 period, decreasing only slightly, from 24.5 percent in 1950 to 23.8 percent in 1980. This decrease was much less than the drop in the employment share, down from 33.7 percent in 1950 to 22.4 percent in 1980, or in the capital stock share, down from 28.4 percent in 1950 to 23.4 percent in 1980. The net effect is that the capital stock per employee (\$106.4 billion divided by 15.2 million employees) was \$7,000 in 1950; by 1980, the capital stock per employee had risen to over \$14,000 (\$287 billion divided by 20.3 million employees).

Private researchers studying the worldwide slump in manufacturing that began in 1973 have compared the changes since 1973 in U.S. output, capital, and employment with long-term changes in these measures to determine if growth rates have significantly slowed. Their conclusion was that the United States did not experience absolute deindustrialization as measured by the size of its manufacturing labor force, capital stock, and output growth, over either the 1950-1973 period or the 1973-1980 period.¹

Nonetheless, efforts to document a decline in U.S. manufacturing continue. Among the most prominent is *The DRI Report on U.S. Manufacturing Industries*, which concludes that a relative decline has occurred in U.S. manufacturing industries, particularly since the mid-1960s.²

The DRI report describes a scenario of historical domestic decline in the manufacturing share of output and employment. The report attributes the growth of the

¹See, for example, Robert Z. Lawrence, *Can America Compete?* (Washington, D.C.: The Brookings Institution, 1984), p. 18, hereafter, *Can America Compete?*

²Otto Eckstein, Christopher Caton, Roger Brinner, and Peter Dupry, *The DRI Report on U.S. Manufacturing Industries* (New York: McGraw Hill, 1984), p. 7; hereafter, *DRI Report*

American economy from the 1920s through the mid-1960s to the fact that industrial production increased more than total gross national product. The disappearance of this margin after 1966 is viewed as being due to the slowdown in manufacturing which precipitated the decline in manufacturing's share of employment. The share of U.S. employment in manufacturing averaged 33 percent in the 1953–1957 period, but declined to 23 percent in the 1978–1982 period.³

To further support these findings, the DRI report examined several key variables for each of the 22 major industry groups comprising the manufacturing sector: the industrial production index, export-import trade balance, productivity, employment, and wages relative to the total economy. At this level of detail, it is clear that the industries within the manufacturing sector have grown unevenly. What is not examined, however, is the growth pattern by firm size, specifically, whether small businesses have exhibited higher rates of growth than large businesses.

The confusion about whether deindustrialization has or has not occurred results from an analysis based on relative rather than absolute change. The DRI report bases its conclusions on relative change, comparing the share of manufacturing jobs with nonmanufacturing jobs over time. This employment share analysis ignores the absolute gains in manufacturing performance over time.⁴

Changes in both demand and supply factors have led to the decline in the manufacturing share of employment. As incomes have risen, consumer demand has increased for services such as education, medical care, finance and real estate. Combined with the greater productivity in manufacturing, this shift in demand has accelerated the drop in the employment share in manufacturing relative to the nonmanufacturing sector. Many analysts consider this shift to be a desirable adjustment of supply in response to consumer demand. It is a trend that is occurring in other industrial economies as well as in the U.S. economy.

Therefore, although overall deindustrialization has not occurred, the allegation of employment deindustrialization continues to be cited as a central argument in favor of industrial policy.

³DRI Report, p. 9.

⁴A more detailed explanation of "Shares as Indicators" appears in Lawrence, *Can America Compete?*, pp. 19–23.

Table 2.2 Average Annual Growth in Employment and Number of Enterprises by Industry Division, 1958–1982 (Percent)¹

Industry Division	Annual Employment Growth		Annual Enterprise Growth	
	1976–1982	1958–1977	1976–1982	1958–1977
U.S. Total	2.6	2.6	1.2	1.9
Small Business-Dominated				
Agriculture	0.8	NA	1.1	NA
Construction	1.3	NA	1.1	NA
Wholesale Trade	2.5	3.7	1.5	1.9
Retail Trade	2.6	3.6	-0.1	0.1
Services	4.9	6.0	3.3	5.6
Large Business-Dominated				
Mining ¹	6.3	0.7	5.2	-1.4
Manufacturing	0.9	1.4	0.6	0.5
Transportation, Communications & Utilities	2.2	NA	0.6	NA
Finance, Insurance & Real Estate	3.2	NA	2.4	NA

¹The 1976–1982 changes in mining reflect expansion of the sample in this division in addition to actual growth.

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

NA = Not Available.

Source: Data for 1976–1982 based on unpublished data from U.S. Small Business Administration, Office of Advocacy, Small Business Data Base; data for 1958–1977 based on U.S. Department of Commerce, Bureau of the Census, *Enterprise Statistics* (Washington, D.C.: U.S. Government Printing Office, 1958 and 1977).

Employment and Enterprise Composition of the U.S. Industrial Base

Perceptions that deindustrialization has occurred in the American economy are linked to the dramatic long-term changes in the industrial composition of U.S. employment. Rising consumer demand and changing lifestyles have led to a sharp increase in the output of services and consumer goods in the United States. The result has been a steep, long-term employment rise in the small business-dominated service, wholesale trade and retail trade sectors.⁵

Since the mid-1970s, the long-term pattern of employment growth has continued, though at a slower pace than

⁵"The Changing Industrial and Size Composition of U.S. Business," *The State of Small Business: A Report of the President, March 1984* (Washington, D.C.: U.S. Government Printing Office, 1984), pp. 115–179; hereafter, *The State of Small Business, 1984*.

in earlier years.⁶ Longitudinal data, recently available from the Small Business Data Base developed by the U.S. Small Business Administration's Office of Advocacy, indicate an annual rate of growth in service employment of approximately 5 percent from 1976 to 1982, compared to 6 percent over the 1958–1977 period (Table 2.2 and Chart 2.1).⁷ At these rates, the service sector's employment gains were almost double the all-industry average annual growth rates of 2.6 percent from 1976 to 1982 and from 1958 to 1977.

These data also confirm that a decline in manufacturing jobs is not occurring, but that growth in manufacturing employment has been slower than in most other industries. Over the 1976–1982 period, the number of workers employed in manufacturing increased approximately 1 percent per year, compared with a 1.4-percent annual gain in manufacturing employment from 1958 to 1977. The low employment growth in manufacturing reflects the slower growth of the business population in this sector than in the nonmanufacturing sector; the population of manufacturers expanded 0.5 percent annually from 1958 to 1977 and 0.6 percent annually from 1976 to 1982.⁸

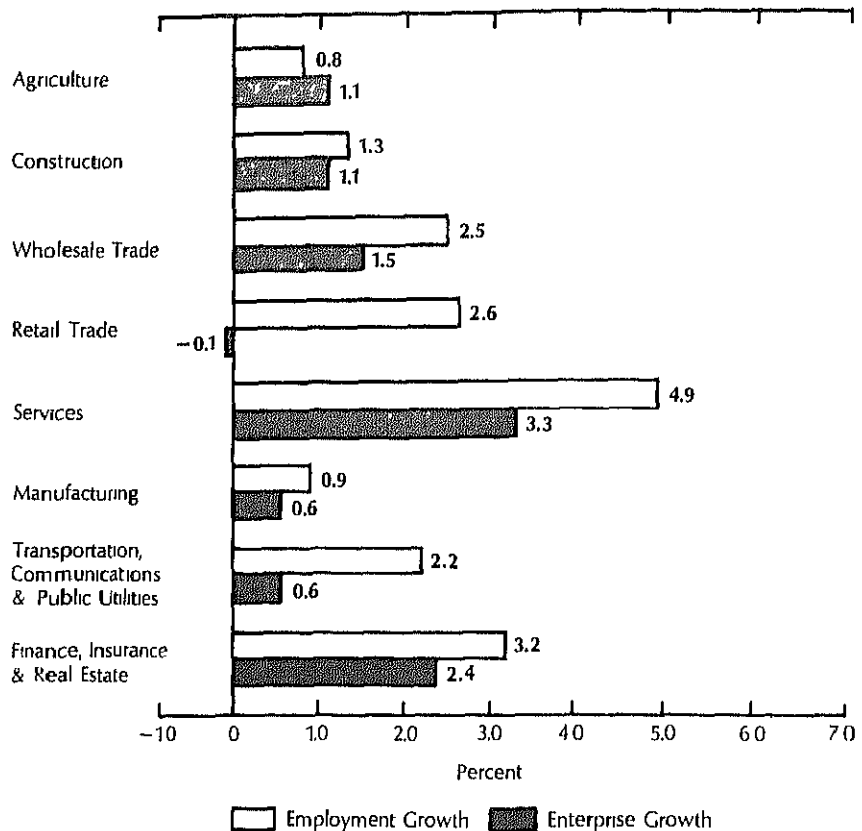
While a significant number of jobs are generated through expansions of business enterprises, many more

⁶The period between 1976 and 1982 is emphasized because it was a time of increased economic instability for both the U.S. and global economies. This period covers a six-year cyclical span including an expansionary phase—following the 1974 downturn—in addition to the recent downturn.

⁷Appendix C of this report discusses the development and structure of the Small Business Data Base (SBDB). The data in this report are adapted from the SBDB longitudinal file called the United States Establishment Longitudinal Microdata File (USELM) completed in June 1984. The compilation of this file is described by Catherine Armington and Marjorie Odle, "U.S. Establishment Longitudinal Microdata (USELM): The Weighted Integrated USELM 1976 to 1982 Sample" (Washington, D.C., prepared for the Office of Advocacy, Small Business Administration (SBA), under award no. SBA-2641-OA-79, June 1984). Comparisons between the 1958–1977 and 1976–1982 periods are made for the five industry divisions covered both by the historical data series *Enterprise Statistics* (ES) and by the SBDB. A detailed explanation of the ES data appears in Chapter 2 of *The State of Small Business, 1984*, pp. 115–179.

⁸The business population consists of both enterprises and establishments. The terms enterprise, firm, and company are used interchangeably to refer to an independent business consisting of one or more commonly-owned locations; individual locations are called establishments. See *The State of Small Business, 1984*, pp. 124–126, for a complete explanation.

Chart 2.1 *Average Annual Growth in Employment and Number of Enterprises by Industry Division, 1976-1982*



Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

jobs are generated by new entrants into the business population, i.e., by growth in the number of business enterprises. For example, services, which ranked first in employment growth, also had the fastest annual growth in number of business enterprises: 5.6 percent during the 1958-1977 period and 3.3 percent between 1976 and 1982.

While industry employment change is an integral part of deindustrialization arguments that support industrial policies, the business population as a source of employment is generally overlooked. Changes in the population of business enterprises represent future as well as current employment opportunities.

**Manufacturing
Employment by
Firm Size: The
Small Business
Factor**

By selectively citing data on the relative share of manufacturing jobs, industrial policy proponents contend that jobs in American manufacturing industries are declining. To remedy this perceived job loss, proposals are offered for "targeted measures" or industrial policies to direct resources into specific industry sectors which include the "traditional" (smokestack, basic, or mature) and "new" industries that emphasize high technology.⁹

Research shows, however, that within the manufacturing sector, existing market mechanisms have already shifted resources from traditional industries toward high-technology industries. Although output and employment declined in some traditional industries, such as steel, autos, and textiles, over the 1970-1981 period, the decline was neither steep nor rapid. The overall growth in manufacturing, however, indicates that instead of deindustrializing or "withering," the manufacturing base is actually changing its composition, producing less steel and fewer cars but more high-technology products, such as office machines and electronic components.¹⁰

*Recent
Employment
Growth: A Firm
Size and Industry
Division
Perspective*

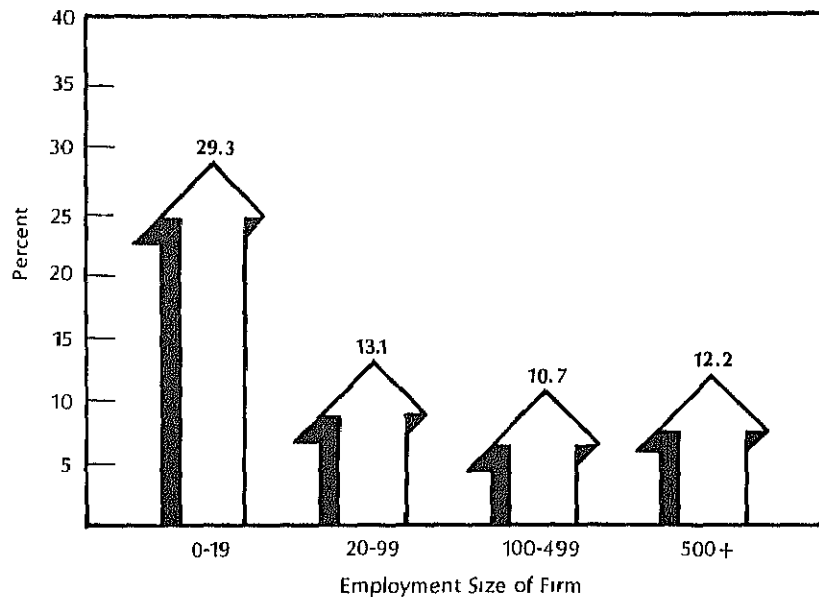
In recent years, extensive research has been conducted on where new jobs originate and how small businesses contribute to the creation of those jobs.¹¹ General statements concerning industry job growth ignore the variations in job generation by firm size. Across all industries, small firm employment growth during the 1976-1982 period outpaced employment changes in

⁹See, for example, *Deindustrialization and the Two Tier Society* (Washington, D.C.: Industrial Union Department, AFL-CIO, 1984), as published in U.S. Congress, House, Committee on Banking, Finance, and Urban Affairs, *Industrial Policy* Part 6, 98th Cong., 2nd sess., 25 January 1984, Serial No. 98-66, p. 25.

¹⁰Robert Z. Lawrence, "Changes in U.S. Industrial Structure: The Role of Global Forces, Secular Trends, and Transitory Cycles," a paper prepared for the symposium on Industrial Change and Public Policy organized by the Federal Reserve Bank of Kansas City at Jackson Hole, Wyoming, August 25-26, 1983.

¹¹See, for example, "Small Business Dynamics and Methods for Measuring Job Generation," in *The State of Small Business: A Report of the President, March 1983* (Washington, D.C.: U.S. Government Printing Office, 1983), Catherine Armington and Marjorie Odle, "Small Business—How Many Jobs?" *Brookings Review* (Winter 1982), p. 1, and David L. Birch and Susan MacCracken, "The Small Business Share of Job Creation—Lessons Learned from the Use of a Longitudinal File" (Washington, D.C.: report on research for the Office of Advocacy, U.S. Small Business Administration, under award no. SBA-5654-OA-81, November 1982).

Chart 2.2 *Employment Growth by Employment Size of Firm, 1976-1982*



Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

larger firms. Small firms with fewer than 500 workers added more than 7.4 million jobs, representing 62.4 percent of the total 11.9-million net job change over the six-year period (Table 2.3 and Chart 2.2).

Most new jobs were clustered in the smallest and largest businesses, with almost 4.6 million workers being added in the smallest size class (0-19 workers) and almost 4.5 million in the largest size class (500 or more workers). The rate of employment growth was greatest in the 0-19 size class, which expanded more than 29 percent, almost two and one-half times the large business rate of growth. This job growth occurred in traditional manufacturing industries, as well as in the new manufacturing high-technology industries.

Data by major industry division show that the service sector was dominant in generating jobs between 1976 and 1982, continuing the long-term trend from 1958 to 1977.¹² Services grew by more than 5 million jobs and accounted for 44 percent of the total increase in U.S.

¹²*State of Small Business, 1984*, pp. 115-179.

Table 2.3 *Employment Growth by Employment Size of Firm, 1976-1982*

Firm Size (Employees)	Total Number of Employees (Thousands)		Employment Growth 1976-1982	
	1982	1976	Number	Percent
Total	87,832.3	75,961.4	11,871.0	15.6
Small Firm				
Total	46,709.1	39,297.4	7,411.7	18.9
0-19	20,172.0	15,597.2	4,574.8	29.3
20-99	14,510.5	12,834.2	1,676.4	13.1
100-499	12,026.6	10,866.0	1,160.6	10.7
Large Firm				
Total	41,123.2	36,664.0	4,459.3	12.2

Note: Small firms are defined here as firms with fewer than 500 employees.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

private-sector employment (Table 2.4 and Chart 2.3). Small service enterprises with fewer than 500 employees added almost 3 million jobs, compared with 2.3 million in large enterprises. Other fast-growing industry divisions were retail trade (2.2 million jobs), manufacturing (1.2 million jobs), and finance, insurance, and real estate (1 million jobs).

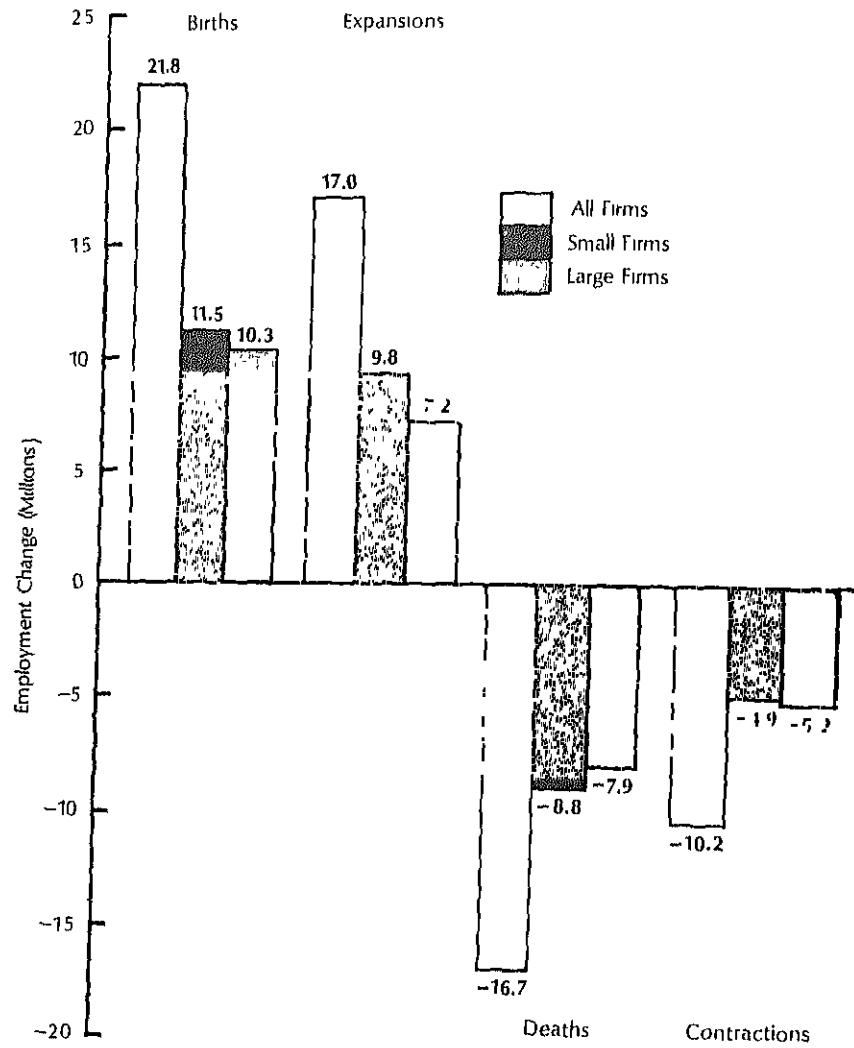
A substantial portion of the service and trade gains are manufacturing-related. At one time, assembly workers provided all of the value added in manufactured goods; now more of the value added in manufactured goods is provided by workers in the distribution industries or by the consumer. Some functions previously performed in the factory now may be done in a retail establishment or at home, for example, dealer-installed automobile options and consumer-assembled children's toys.¹³

Small Firm Job Growth in the Smokestack and High Technology Manufacturing Industries

The "smokestack" and the "high technology" industries are most frequently mentioned in the industrial policy debate. Advocates of government industrial policy interventions proposed to redirect resources in order to restore the vitality of smokestack industries and to maintain and accelerate the growth of high-technology industries.

¹³"The De-Industrialization of the United States?" as cited by Leon Taub in testimony before U.S., Congress, House Committee on Banking, Finance and Urban Affairs, *Status of the Economy*, 98th Cong., 1st sess., May 26, 1983, p. 50.

Chart 2.3 Sources of Job Growth by Type of Establishment Change and Employment Size of Firm, 1976-1982



Note: Small firms are defined here as firms with fewer than 500 employees.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

However, the patterns of job growth—particularly the rapid job gains in small firms—indicate resource immobility is not a problem within these industries. The movement of resources away from the traditional and to high-technology industries is evident in the substantially greater employment gains in the high-technology group.

Although there are variations in growth rates by firm size within these two industry groups, there is a consistent pattern of higher job growth in small firms of fewer than 20 employees than in other size classes of firms. The more dynamic job gains in these small firms imply they are utilizing resources in response to changing competitive market forces and are expanding employment in this process of resource reallocation.

There is no universally accepted or exact definition of either the smokestack or high-technology industries. There are, however, certain characteristics generally associated with each category. Smokestack manufacturing industries are heavily capital-intensive, utilize older technologies, and adapt slowly to technological change. By contrast, high-technology industries are knowledge-intensive and quick to adopt "state-of-the-art" technologies.

The most widely accepted formal definition, developed by the Bureau of Labor Statistics, equates high-technology industries with knowledge-intensive manufacturing industries that employ more engineers, scientists and technical workers than in all manufacturing, and have a high level of research and development expenditures.¹⁴ Recent research studies have broadened the definition of high-technology industries to include service industries that are related to or use high-technology products, e.g., consulting firms that develop new software and personal computer retailing.

Under these definitions, most high-technology industries are dominated by large businesses. Large firms with 500 or more workers employ 94 percent of U.S. scientists and engineers and account for 96 percent of research and development expenditures—including company and federal funds.¹⁵

¹⁴See, for example, Richard Riche, Daniel I. Hecker, and John O. Burgan, "High Technology Today and Tomorrow: A Small Slice of the Employment Pie," *Monthly Labor Review* (November 1983), pp. 50–59.

¹⁵National Science Foundation, "Trends in Small Companies' R&D Expenditures" (Washington, D.C.: National Science Foundation, June 1984), pp. 1–3.

Table 2.4 Net Change in Employment by Industry Division and Employment Size of Firm, 1976-1982 (Thousands)

Industry Division	Employment Size of Firm					
	Total	<20	20-99	100-499	<500	500 +
U.S. Total	11,871.0	4,574.7	1,676.4	1,160.6	7,411.7	4,459.3
Small Business-Dominated	8,608.0	3,141.3	1,110.7	925.7	5,177.6	3,469.9
Agriculture	42.5	89.7	-15.2	-12.2	62.3	-19.7
Construction	359.0	486.7	-24.0	-92.9	369.8	-10.7
Wholesale Trade	756.7	513.0	101.6	77.9	692.4	64.3
Retail Trade	2,192.3	490.2	327.0	262.6	1,079.8	1,112.5
Services	5,257.5	1,561.7	721.4	690.4	2,973.5	2,284.0
Large Business-Dominated	3,263.0	1,433.5	565.7	234.9	2,234.1	1,028.9
Mining ¹	363.4	83.5	68.3	64.1	215.9	147.5
Manufacturing	1,170.3	654.8	296.7	67.1	1,018.6	151.7
Transportation, Communications and Utilities	693.6	213.0	71.2	42.3	326.5	367.2
Finance, Insurance and Real Estate	1,035.6	482.2	129.5	61.4	673.1	362.6

¹The changes in mining reflect expansion of the sample in this sector in addition to actual growth

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

Detail may not add to total because of rounding

Source U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Although smokestack and high-technology industries are closely scrutinized in industrial policy deliberations, these industries account for a small proportion of manufacturing employment. Both industries combined represent only 22 percent of all U.S. manufacturing employment, a total of 5.1 million of the 23.1 million jobs in the manufacturing sector.¹⁶ In spite of this limited scope, the question of deindustrialization has focused attention on the smokestack industries, while the rapid employment growth in the high-technology industries has demonstrated their potential for creating future jobs. The U.S. Department of Commerce estimates that from 1979 to 1987, high-technology industries will have expanded their employment 19 percent, offsetting the 17-percent decline in smokestack industry jobs (Table 2.5).

To illustrate the employment performance of the small business component within both categories of industries, employment growth rates by firm size for the ten industry groups representing high technology were compared with growth rates for the five groups representing smokestack industries.¹⁷

Within these groups, growth rates vary widely by size of firm. However, there is a pattern of higher job growth in small firms of fewer than 20 employees than in other size classes of firms.

Not only were small firms consistently expanding employment in the fast-growing industries, but they were also adding jobs at sizable rates where the industry group was not performing as well in generating jobs. For example, in steel mill products, total employment fell 11 percent from 1976 to 1982; the smallest size class grew 80 percent, reflecting the emergence of "mini-mills" utilizing the latest technologies.¹⁸

Employment in the machine tool industry also reflected the impact of technology adoption by small firms, as

¹⁶The data cited are for 1982, based on the USELM file; see explanation in Appendix C of this report.

¹⁷The U.S. Department of Commerce classification of industries into the high-technology and smokestack categories represents a judgmentally selected sample; see John L. Cremeans, Gurmukh Gill, Virgil Ketterling, Ann Lawson, and Kan Young, "Structural Change in the U.S. Economy 1979-1987, High Technology versus Smokestack Industries," Bureau of Industrial Economics, U.S. Department of Commerce, *1984 U.S. Industrial Outlook* (Washington, D.C.: U.S. Government Printing Office, January 1984), pp. 39-45.

¹⁸Mini-mills are small, technologically advanced firms that use electric furnaces to convert scrap into steel and to produce one or two custom products.

Table 2.5 *Employment Growth by Employment Size of Firm in Selected High Technology and Smokestack Industry Groups, 1976-1982, and Projected Employment Change, 1979-1987*

Industry Group (SIC Code)	1976 Employment (Thousands)	Percent Employment Change 1976-1982 by Employment Size of Firm					1979-1987 Total Projected Change
		Total	<20	20-99	100-499	500 +	
High Technology							
Drugs (283)	214	0.8	62.1	30.0	26.5	-4.4	10.4
Rubber & Miscellaneous Plastics (30)	740	5.0	69.6	23.9	9.8	-7.8	-4.3
Office & Computing Machines (357)	391	35.7	231.6	127.0	128.0	24.1	55.8
Communication Equipment (366)	515	19.8	117.5	55.8	31.7	14.6	22.5
Electronic Components & Accessories (367)	489	38.1	142.0	60.7	31.4	31.0	20.3
Aircraft & Parts (372)	382	35.2	90.2	25.5	24.8	35.6	7.2
Measuring & Controlling Instruments (382)	239	39.4	111.6	70.7	25.4	33.2	2.3
Optical Instruments & Lenses (383)	28	27.7	66.1	56.5	4.2	19.4	19.6
Medical Instruments & Supplies (384)	146	51.7	71.2	34.0	35.4	55.3	31.9
Photographic Equipment & Supplies (386)	97	28.7	56.7	10.4	15.4	29.9	0
Total High Technology	3,241	24.9					18.9

Smokestack							
Motor Vehicles and Equipment (371)	844	5 1	54 1	19 2	6 2	3 4	- 20 7
Steel Mill Products (331)	524	- 11 4	79 6	31 0	29 2	- 14 8	- 25 2
Primary Nonferrous Metals (333)	79	- 3 5	83 1	39 1	31 0	- 6 7	- 2 3
Farm Machinery and Equipment (352)	173	- 5 5	36 4	1 6	- 24 0	- 6 5	- 15 0
Machine Tools (3541)	98	6 1	64 3	8 2	- 7 5	2 8	3 2
Total Smokestack	1,718	1.2					- 17.2
Total Selected Industry Groups	4,959	15.8					4.2
Total Manufacturing	21,914	5.3					NA

Note: NA = Not Available.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data, industry group categorization and 1979-1987 projected change from John E. Cremeans, Gurmukh Gill, Virgil Ketterling, Ann Lawson, and Kan Young, "Structural Change in the U.S. Economy 1979-1987, High Technology versus Smokestack Industries" in U.S. Department of Commerce, Bureau of Industrial Economics, *1984 U.S. Industrial Outlook* (Washington, D.C.: U.S. Government Printing Office, January 1984), pp. 39-45. See also Table A2.14

Table 2.6 Employment Growth by Major Manufacturing Group and Employment Size of Firm, 1976-1982

SIC Code	Major Manufacturing Group	Percent Change by Employment Size of Firm				
		Total	< 20	20-99	100-499	500+
Durable Goods						
24	Lumber & Wood Products	-2.4	22.7	-4.7	-11.2	-6.4
25	Furniture & Fixtures	6.2	37.9	12.1	-2.6	1.5
32	Stone, Clay & Glass Products	-5.8	13.6	-0.5	5.7	-12.1
33	Primary Metals	-5.0	49.8	12.0	1.2	-8.6
34	Fabricated Metal Products	5.3	45.4	12.1	-0.1	-1.8
35	Machinery, Excluding Electrical	15.1	55.0	20.3	16.6	8.5
36	Electrical & Electronic Machinery	17.8	94.4	42.5	22.9	12.0
37	Transportation Equipment	10.6	45.0	16.6	12.4	9.1
38	Instruments & Related Products	36.4	77.8	39.3	19.1	35.6
39	Miscellaneous Manufacturing	1.8	29.9	3.7	-7.1	-4.7
Nondurable Goods						
20	Food & Kindred Products	0.5	20.2	-0.6	-4.2	0.3
21	Tobacco Manufactures	4.1	18.0	-19.3	-1.2	4.7
22	Textile Mill Products	-10.7	45.8	-0.7	-11.5	-14.1
23	Apparel & Other Textile Products	-9.7	39.7	-4.6	-9.6	-17.6
26	Paper & Allied Products	-4.6	49.4	8.7	9.3	-9.5
27	Printing & Publishing	12.6	37.6	11.4	0.6	6.9
28	Chemicals & Allied Products	4.5	38.0	15.0	10.9	1.0
29	Petroleum & Coal Products	13.1	41.3	21.0	33.2	9.9
30	Rubber & Miscellaneous Plastic Products	5.0	69.6	23.9	9.8	-7.8
31	Leather & Leather Products	-13.5	39.5	9.2	-9.3	-22.4

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

jobs in firms with under 20 employees increased 64 percent.¹⁹

The smokestack industries are representative of what has occurred throughout manufacturing. Between 1976 and 1982, all manufacturing firms added 1.2 million net new jobs, of which 54 percent, or 631,000 jobs, were added by small firms with fewer than 500 workers. Across the 20 manufacturing industry sectors, the smallest firms with 1–19 workers were expanding the most rapidly, even in the seven sectors with overall net job losses: Textile Mill Products; Apparel and Other Textiles; Lumber and Wood Products; Paper and Allied Products; Leather & Leather Products; Stone, Clay, and Glass Products, and Primary Metals (Table 2.6). This smallest size category of firms added almost 890,000 new jobs, but the gain was partly offset by job losses in other small business size classes.

Greater employment gains have been made in the consumer-oriented nondurable goods industries than in durable goods industries. Job gains in the smallest firms are more dynamic than in other firm size classes, implying that these smallest firms are utilizing resources and expanding employment in response to changing market forces.

Research also shows that the greater dynamism of the high-technology industries is linked to successful small firms.²⁰ Recent analyses comparing high technology, all manufacturing and business services, and all nonfarm industries except government, confirm that across industries, the most rapid rates of employment growth have occurred in small businesses with under 100 employees. In the 88 detailed high-technology industries studied, these small single-establishment firms grew by 48 percent from 1976 to 1982, while small multi-establishment firms expanded by 44 percent (Table 2.7). Large single-establishment firms of more than 500 workers experienced substantial job losses over this period, but there were employment gains in large multi-establishment firms in two size classes; employment in the 500–999

¹⁹The adoption of new technologies by small firms is examined in the U.S. Congress, Joint Economic Committee, *New Technology in the American Machinery Industry: Trends and Implications*, 98th Cong., 2d sess., March 2, 1984, S. Prt. 98–148.

²⁰The Brookings Institution, Business Microdata Project, "High Technology Employment Growth, 1976–1980: Considerations of Firm Size" (Washington, D.C., prepared for the National Science Foundation, June 1984).

Table 2.7 *Employment Growth in Selected Industry Categories by Employment Size of Firm, 1976-1980*

Industry Category	1976 Employment (Thousands)	Percent Change by Employment Size of Firm					
		Net	<100	100-499	500-999	1,000- 9,999	10,000 +
Independent, Single Establishment Firms							
All	30,275	13.9	20.1	0.2	0.6	-9.8	24.6
High-Technology, High-Growth	477	43.5	55.3	17.7	8.1	-26.5	0*
High-Technology, All	650	36.9	48.4	16.5	-16.4	-36.1	0*
Manufacturing and Business Services	6,478	20.9	28.4	1.3	-8.6	-20.3	0*
Multi-Establishment Firms							
All	11,572	6.3	20.7	7.4	2.0	-1.7	-2.2
High-Technology, High-Growth	686	18.9	51.6	26.9	21.5	11.8	10.4
High Technology, All	1,078	7.8	44.1	24.8	23.2	3.7	-9.2
Manufacturing and Business Services	4,722	4.1	27.8	7.8	0.8	-4.8	-3.1

*There were no firms in these categories.

Source: Based on the Brookings Institution, Business Microdata Project, "High Technology Employment Growth, 1976-1980: Considerations of Firm Size" (Washington, D.C.: prepared for the National Science Foundation, June 1984)

size class grew by 2.7 percent and in the 1,000-7,777 size class by 4 percent.

The sharp increases in small firm employment are particularly noteworthy because the proportion of employment in small businesses varies widely across high-technology industries (Tables 2.8 and A2.15). The greatest share of employment in small firms with fewer than 100 workers is found in the industrial patterns industry (SIC 3565) where 9,756 jobs or 92.5 percent of the employment is in small firms. At the low end of the spectrum, only 0.3 percent or 1,424 jobs out of the 474,631 in aircraft (SIC 3721) are in small businesses.

Yet even in the large business-dominated high-technology industries where employment has declined, small firms are consistently generating jobs. Unfortunately, the dynamism of small firms is obscured by the aggregation of data in the research studies of these industries. In high-technology industries, it is evident that small firms are contributing disproportionately to employment growth through their introduction of innovations and their expansion at later stages of the product/business life cycle.

**Determinants of
Small Firm Job
Growth in U.S.
Markets**

Why small businesses have consistently exhibited employment vitality, even in declining industries, is a relevant issue for economic policy and industrial strategy discussions. Several factors have contributed to U.S. economic progress over the 1976-1982 period. These factors—entrepreneurship, the ability to expand as demonstrated by employment growth, and innovation—influence small business vitality and growth. Economic progress is determined by entrepreneurship and the expansion of existing businesses; both are influenced by innovation.²¹

**U.S.
Entrepreneurship
Since the Mid-
1970s**

Entrepreneurship, the creation of new independent businesses, is an important national resource that is influenced by national policies.²² Through entrepreneurship, innovations are introduced into the marketplace to im-

²¹A comprehensive discussion of the relevant literature appears in Morton I. Kamien and Nancy L. Schwartz, *Market Structure and Innovation* (Cambridge: Cambridge University Press, 1982), hereafter, *Market Structure*.

²²Karl H. Vesper, *Entrepreneurship and National Policy*, Heller Institute for Small Business Policy Papers, as cited in U.S., Congress, House Committee on Banking, Finance, and Urban Affairs, *Industrial Policy*, 98th Cong., 2d sess., Part 2, p. 38.

Table 2.8 Employment Growth in Selected High Technology Industries by Employment Size of Firm, 1976-1982

SIC Code	Type of Industry	1976 Employment	Employment Change by Employment Size of Firm (Percent)				Employment Share in Small Firms with <100 Employees (Percent)
			Total	0-19	20-99	500 +	
High-Growth, Small Business-Dominated							
3544	Special Dies, Tool Sets, Jigs & Fixtures	130,356	13,649 (10.5)	15,807 (40.7)	2,383 (5.2)	-5,325 (-21.1)	75.1
7394	Equipment Rental & Leasing Services	221,293	75,014 (33.9)	53,682 (47.4)	2,502 (5.4)	17,753 (50.8)	70.7
7399	Business Services, n e c	471,391	195,800 (41.5)	83,687 (51.3)	23,816 (31.1)	73,653 (42.9)	64.5
High-Growth, Large Business-Dominated							
2911	Petroleum Refining	158,255	26,955 (17.0)	1,118 (96.9)	2,587 (96.2)	19,398 (12.9)	1.9
3535	Conveyers, Conveying Equipment	41,625	3,747 (9.0)	1,924 (63.3)	2,727 (35.8)	-2,050 (-9.3)	31.3

3568	Mechanical Equipment, n.e.c.	16,452	2,367 (14 4)	307 (58 5)	314 (33 0)	824 (6 1)	5 4
3823	Industrial Instruments	78,822	24,887 (31 6)	5,633 (139 8)	5,017 (89 9)	10,629 (17 5)	20 8
Negative-Growth, Large Business-Dominated							
2823	Cellulosic Man-Made Fibers	20,640	-2,363 (-11 5)	92 (101 1)	17 (3 6)	-2,431 (-12 3)	1 1
3651	Radio and TV Receiving Sets	117,412	-852 (-0 7)	1,560 (51 7)	792 (14 4)	-6,592 (-6 6)	3 4
3675	Electronic Capacitors	31,871	-16,351 (-51 3)	208 (140 5)	450 (133 9)	-1,776 (-62 7)	9 1

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated; n.e.c. = not elsewhere classified.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data, see also Table A2.15

prove consumer choice and build economic strength so the Nation can compete effectively in global markets.

There is, however, no measure of entrepreneurship that counts both the newly self-employed and new businesses with employees. Proxy measures generally used are the data compiled by the Dun & Bradstreet (D&B) Corporation on business starts and business incorporations.²³ The incorporation data have been publicized extensively as indicators of an "entrepreneurial explosion" in the U.S. economy over the past 30 years.²⁴ Much of this increase in entrepreneurship is thought to have occurred since the mid-1970s; by D&B estimates, there were 533,500 incorporations annually by 1980, a 65-percent increase over 1975. These data, however, show only one side of the changes.

Because 1976-1982 was a period of increased instability in the American economy, a critical question is whether the industrial base has expanded as a result of these new business formations. An expansion of the business population comprising the industrial base would be occurring if more new businesses were being created than dissolved. The Office of Advocacy is developing a capability to compare new business formations, termed "births," with business dissolutions, termed "deaths."²⁵ This research investigates how small firms move resources into expanding industries and out of declining industries. Two hypotheses are to be tested:

1. Factors of production utilized by small firms are more mobile than those used by large firms.
2. Through faster entry and exit, small firms are responding to market changes more quickly than large businesses. Small firm entry prevents bottlenecks in an expanding industry; their exit alleviates excess capacity in declining industries.

The implications of this research for industrial policy are apparent. If small firm formations and expansions are channeling resources from declining to growing indus-

²³A detailed discussion of these measures and their limitations is presented in "Business Formation and Dissolution," *The State of Small Business. A Report of the President, March 1983* (Washington, D.C.: U.S. Government Printing Office, 1983), pp. 135-163.

²⁴John Naisbitt, *Megatrends: Ten New Directions Transforming Our Lives* (New York: Warner Books, 1982).

²⁵Steven Lustgarten, "Firm Size and Resource Mobility" (New York: Baruch College Research Foundation, research in progress under award no. SBA-7156-OA-83).

tries, then the cycle of industrial change is already occurring under free market conditions; thus there is no basis or need for industrial policies.

Preliminary data from this SBA-sponsored research provide a birth rate, which represents the number of enterprises formed over the 1976–1982 period per each 100 enterprises in the 1976 base year.²⁶ A death rate, defined as the number of enterprise dissolutions per 100 enterprises in the base year, has also been calculated. These birth and death rates can be compared within industries and within size classes of firms by constructing a ratio of births to deaths (Table 2.9).

A ratio greater than 1 represents a faster rise in births than deaths within an industry size class. For example, the highest birth-to-death ratio of 2.24 in the 0–4 firm size class in services means that from 1976 to 1982 there were 2.24 service enterprises born, or formed, in the 0–4 size class for every 1.0 service firm that died, or was dissolved, in this size class. Alternatively stated, service firm births were more than twice the deaths in the 0–4 size class.

Births were also more than double the firm deaths in the 5–19 size class and one and one-half times the deaths in the 20–99 size class in services. These data show that the expansion of the small business population in services and the rapid employment gains in this industry division were occurring simultaneously.

A high birth-to-death ratio is also found in the small business size classes of finance, insurance, and real estate. Over the 1976–1982 period, this industry division ranks fourth in job growth among the nine industry divisions, but second in number of business births. The high birth-to-death ratio is indicative of the increased business formations following the deregulation of financial service

²⁶Most analyses use establishment births as a proxy for new business formations. These data, however, represent actual enterprise births and deaths based on firms that are single, unaffiliated establishments ("simples") and firms that have multiestablishment components ("tops"). These concepts are fundamental operating definitions adopted for the development of the SBDB as explained by Candee S. Harris, "USEEM: U.S. Establishment and Enterprise Microdata, Version 3" (Washington, D.C.: prepared for the Office of Advocacy, U.S. Small Business Administration, under award no. SBA-5654-0A-81, April 1983). The analysis is based on comparative static data. Migrations of firms across size classes are reflected together with the dynamic changes, i.e., changes due to actual increases or decreases within each size class.

Table 2.9 Ratios of Enterprise Births to Deaths by Industry Division and Employment Size of Firm, 1976–1982

Industry Division	Ratios by Employment Size of Firm				
	0–4	5–19	20–99	100–499	500+
Small Business-Dominated					
Agriculture	1.91	1.23	0.85	0.71	0.54
Construction	1.41	1.30	1.04	0.80	1.25
Wholesale Trade	1.62	1.44	0.81	0.70	1.10
Retail Trade	1.03	1.08	1.21	1.07	0.80
Services	2.24	2.13	1.48	0.98	0.51
Large Business-Dominated					
Mining ¹	2.32	2.43	2.19	2.04	1.19
Manufacturing	1.46	1.42	0.87	0.60	0.82
Transportation, Communications & Utilities	1.38	1.38	1.04	0.79	0.76
Finance, Insurance & Real Estate	2.28	2.00	1.35	0.62	0.58

¹ The 1976–1982 changes in mining reflect expansion of the sample in this division in addition to actual growth.

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

Source: Calculated from preliminary data developed by Steven Lustgarten, "Firm Size and Resource Mobility" (New York: Baruch College Research Foundation, being conducted under award no. SBA-7156-OA-83). See also Tables A2.16 and A2.17.

industries. Births have risen as regulations were eliminated.

Factors such as capital requirements and regulatory barriers have inhibited firm entry into manufacturing, although the birth-to-death ratio of more than 1 in the small manufacturer size classes indicates that firm births are exceeding dissolutions. These rates show that in manufacturing, small business entry can and does occur in the 0–4 and 5–19 size class, while larger scale dissolutions are greater than births.

Large scale enterprises are also being formed in the 500-and-over size class. In wholesale trade, for example, there are 1.1 large business births for each large-firm death. The higher birth rate is attributable to the large minimum scale of operation required to enter and be profitable in many of the distribution industries. Business formations require a minimum scale for entry based on factors such as capitalization and capacity that vary by industry.

What is also occurring in the larger size classes is that businesses are "born" through divestitures rather than through new business formations

business
expansion A
source of job
growth

Some advocates of industrial policies discount the importance of small firm employment gains by maintaining that jobs in small businesses are not permanent but are created temporarily by firm births.²⁷ It should be noted that this criticism is based on analyses of establishment data, not data on independent enterprises or firms

While some employment growth results from enterprise births, a substantial number of new jobs from 1976 to 1982 were created by the expansion of small firms. Through the addition of new branches, called establishment births, small firms generated almost 11.5 million jobs, while through the expansion of existing branches, small firms contributed an additional 9.8 million jobs, for a total of 21.3 million new jobs in small businesses (Table 2.10 and Chart 2.4). Over 10 million of these jobs were added in the smallest size class of firms with fewer than 20 workers. Over the 1976-1982 period, large businesses with more than 500 workers expanded employment more slowly, adding 17.5 million jobs. These employment gains were eroded by losses because of deaths and contractions of both large and small firm branches or establishments, resulting in a 13.1-million job decline in large businesses and a 13.8-million job decline in small. The overall effect is that small firm establishments contributed 62.4 percent of the net increase in employment from 1976 to 1982.

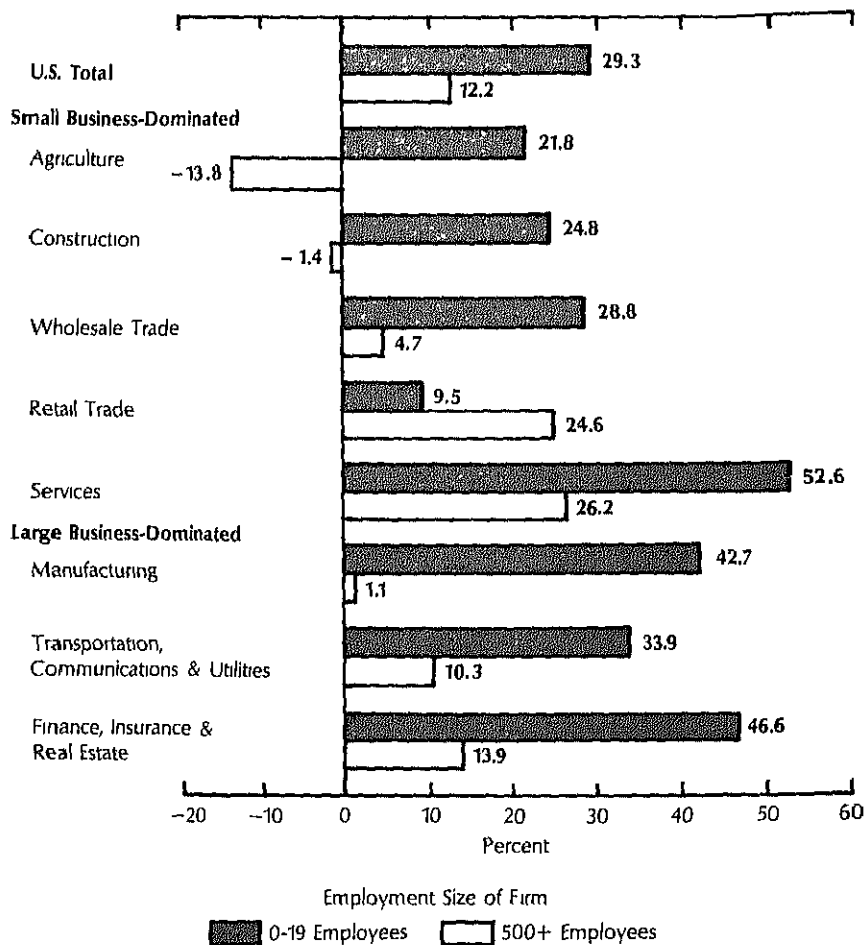
// Firm
novation
ent Evidence

Entrepreneurship and employment growth are clearly influenced by innovation. Entrepreneurship is often the realization or actualization of innovation. Economists have concluded that "the competition of new rivals in an industry spurs rapid technical advance."²⁸ Consequently, innovation is linked to expansion. Recent research shows this connection between innovation and industry expansion in terms of employment growth. This research identified innovations introduced into the market in 1982. Since an average of 4.3 years are required for small or large firms to bring an innovation to market, the

²⁷Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (New York: Basic Books, 1982), pp. 220-224

²⁸Summary of work by G. P. Stigler, "Industrial Organization and Economic Progress," in L. D. White, ed., *The State of the Social Sciences* (Chicago: University of Chicago Press, 1956), as cited in Kamien and Schwartz, *Market Structure*, p. 91.

Chart 2.4 *Growth Comparison of Smallest and Largest Firms by Industry Division, 1976-1983*



Note The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when 60 percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the agriculture, construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

Source U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

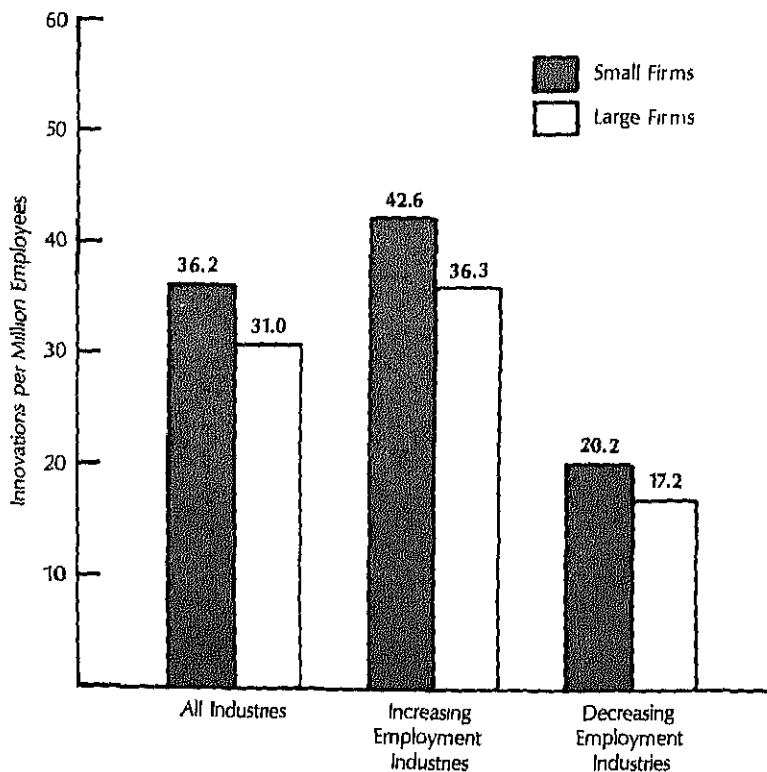
Table 2.10 Sources of Establishment Job Growth by Employment Size of Firm, 1976-1982 (Thousands)

Firm Size (Employees)	Employment Increase		Employment Decrease		Net Change	
	Births	Expansions	Deaths	Contractions	Number	Percent
Total	21,776	17,016	-16,745	-10,177	11,871	15.6
Large Firm Total	10,312	7,249	-7,908	-5,193	4,459	12.2
Small Firm Total	11,465	9,767	-8,837	-4,983	7,413	18.9
0-19	5,409	4,691	-3,958	-1,567	4,575	29.3
20-99	3,299	2,812	-2,675	-1,759	1,676	13.1
100-499	2,757	2,264	-2,204	-1,657	1,161	10.7

Note: Small firms are defined here as firms with fewer than 500 employees. Detail may not add to total because of rounding.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Chart 2.5 *Innovations Per Million Employees by Employment Size of Firm, 1982*



Note: Small firms are defined here as firms with fewer than 500 employees

Source: Keith L. Edwards and Theodore J. Gordon, "Characterization of Innovations Introduced on the U.S. Market in 1982" (Glastonbury, CN prepared for the U.S. Small Business Administration, Office of Advocacy, under award no. SBA-6050-OA-82, March 1984), p. 46

innovations studied represent new products and processes underway during the late 1970s, a period roughly coincident with the period covered in this chapter.²⁹

A primary finding of this study is that the innovation rate, or number of innovations per million employees, for small firms substantially exceeds the innovation rate

²⁹Keith L. Edwards and Theodore J. Gordon, "Characterization of Innovations Introduced on the U.S. Market in 1982" (Glastonbury, CT. prepared for the Office of Advocacy, U.S. Small Business Administration, under award no. SBA-6050-OA-82, March 1984), p. 63, hereafter, "Characterization of Innovations "

for large firms. The small firm rate is 36.2 innovations compared to 31 innovations by large firms (Chart 2.5). In addition, in both increasing and decreasing employment industries, the small firm innovation rates are higher than the large firm rates.

The innovations were also classified by industry code of the innovating firm and were summarized by industry division (Table 2.11). Significant differences exist between the small and large firm innovation frequency with respect to industry division. A higher percentage of small firm innovations occurs in the manufacturing and wholesale industries, while a higher percentage of the large firm innovations is present in agriculture, mining; construction; transportation and utilities, retail, finance, insurance, and real estate; and services. This is not a surprising finding since 96 percent of research and development (R&D) expenditures are made by large businesses.

More relevant to the industrial policy debate is that the frequency of innovations by small businesses is as high as it is, and that such a high proportion of manufacturing innovations are introduced by small firms. If all innovations for the large and small firms are compared, the margin between these two groups is very small. Large firms accounted for more than 2,800 innovations, while small firms introduced 2,100 innovations. This means that for every innovation originating in small businesses, 1.3 innovations were contributed by large businesses. For manufacturing, the differential is slightly lower; for every innovation by small firms, there are 1.25 innovations by large firms.

This low differential between the frequency of innovations by small and large firms implies a much greater "inventive output" per dollar of R&D spending by small firms than by their large counterparts.³⁰

In manufacturing, which includes 78 percent of the industries represented, the small firm contribution of almost 2,000 innovations compared to 2,500 by large firms is particularly noteworthy, as manufacturing is large business-dominated, with only 35 percent of manufacturing jobs in small businesses.

Of the 4,938 innovations studied, 3,700 originated in industries where employment is expanding, suggesting new cycles of industry growth. Past studies of innovation have shown that opportunities for small firms tend to be

³⁰Kamien and Schwartz, *Market Structure*, p. 67.

Table 2.11 *Distribution of Innovations by Industry Division and Employment Size of Firm, 1982*

Industry Division	Total Innovations ¹		Number of Innovations in Increasing Employment Industries		Number of Innovations in Decreasing Employment Industries	
	Large Firm	Small Firm	Large Firm	Small Firm	Large Firm	Small Firm
U.S. Total	2,830	2,089	2,089	1,612	586	371
Small Business-Dominated						
Agriculture	184	110	45	25	74	62
Construction	4	—	—	—	—	—
Wholesale Trade	24	3	24	2	—	—
Retail Trade	77	75	12	19	64	52
Services	9	—	4	—	—	—
	70	32	5	4	10	10
Large Business-Dominated						
Mining	2,646	1,979	2,044	1,587	512	309
Manufacturing	102	2	77	1	25	—
Transportation, Communications & Utilities	2,455	1,954	1,967	1,585	487	309
Finance, Insurance & Real Estate	21	9	—	—	—	—
	68	14	—	—	—	—

¹Number of innovations excludes those that could not be allocated by industry employment change or division therefore, numbers shown will not add to totals.

Note: The U.S. Small Business Administration, Office of Advocacy, defines an industry division as small business-dominated when sixty percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the construction, wholesale trade, retail trade and service divisions are classified as small business-dominated.

These were innovations for which the size at the innovating firm could be found in published directories. A telephone survey of a random sample of other innovations resulted in an estimated total (including the above) of 3,631 large firm innovations and 4,443 small firm innovations.

Source: Keith L. Edwards and Theodore J. Gordon, "Characterization of Innovations Introduced on the U.S. Market in 1982" (Glastonbury, CT: prepared for the Office of Advocacy, SBA, under award no. SBA-6050-OA-82, March 1984), p. 34.

greatest in the earliest stages of the product cycle (i.e., when an industry is least mature). During this stage, economies of scale are not important, market shares are volatile, and rates of entry and failure are high. Firm entry is principally dependent on scientific and technological capability, but as technologies mature, scale and efficiency in production become increasingly more important, and opportunities for small firms become fewer.¹¹ The high frequency of small firm innovations indicates that mature manufacturing industries are introducing new products and processes that could create opportunities for small firms and open a new growth cycle in these industries.

**The Foreign
Experience:
Industrial Policies
and Slow
Employment
Growth**

An assessment can be made of the foreign experience with industrial policies to determine whether such policies have promoted small businesses in the process of economic growth.

The industrial strategies adopted in Western Europe and Japan since World War II comprise industrial policies for export promotion and for integrating international trade with domestic economic performance. These policies cover a diverse range of activities: management of currency exchange rates; special financing and tax measures to promote exports; government involvement in the granting of major trade contracts abroad; nontariff trade barriers; financial measures to promote new industries, firms, products and technologies, and to encourage modernization and expansion; policies to influence the structure of competition and to encourage economies of scale; and consensus-building measures, both formal and informal, among economic sectors. All of these policies are interventions designed to redirect resources to specific firms, industries, or industry activities that are designated under a government plan.¹²

There has been increasing evidence that these foreign industrial policies have not proven successful in creating employment opportunities, either in their manufacturing sectors or in their overall economies.

¹¹ *Ibid.*, p. 73.

¹² Summaries of the individual nations' policies may be found in U.S. Congress, Joint Economic Committee, *Policies for Industrial Growth in a Competitive World: A Volume of Essays*, Joint Committee Print, 98th Cong., 2d sess., April 27, 1984, pp. 4-12. A detailed itemization of policies by nation is presented in Melvin Krauss, "Europeanizing the U.S. Economy: The Enduring Appeal of the Corporatist State," in *The Industrial Policy Debate*, Chalmers Johnson, ed. (San Francisco, CA: Institute for Contemporary Studies, 1984), pp. 71-90.

Table 2.12 *Total and Manufacturing Job Growth in the United States and Selected Other Industrialized Nations, 1960-1982 (Percent)*

	1960-1980	1970-1980	1980-1982
Total Employment			
United States	19.5	24.9	0.3
Japan	14.8	8.7	1.8
France	9.4	3.9	-0.9
Germany	1.6	-1.4	-2.4
Great Britain	2.7	1.3	-6.4
Italy	-4.9	7.0	0.0
Netherlands	12.4	1.9	-3.1
Sweden	7.1	9.8	-1.1
Manufacturing Employment			
United States	20.1	5.8	-7.5
Japan	45.8	-0.9	0.8
France	7.8	-3.8	NA
Germany	9.8	-9.5	NA
Great Britain	-4.6	-18.1	-16.0
Italy	10.0	3.6	-3.8
Netherlands	4.0	-19.7	NA
Sweden	-5.0	-3.7	-7.7

Note: NA = Not Available

Source: Bureau of Labor Statistics, Statistical Supplement to International Comparison of Unemployment Bulletin, September 1983, as cited in U.S. Congress, Joint Economic Committee, *Industrial Policy Movement in the United States: Is It The Answer?*, 98th Cong., 2d sess., 1984. S. Prt. 98-196, p. 31

From 1960 to 1980, the United States increased its total employment much more rapidly than either Japan or Western European nations (Table 2.12). U.S. employment rose 19.5 percent, while the European job gains ranged from only 1.6 percent in Germany to 12.4 percent in the Netherlands. Italy experienced a job loss of approximately 5 percent over the 20-year period.

In Japan, total employment grew almost 15 percent, but growth in manufacturing employment, at 46 percent, was more than double the rate of U.S. manufacturing growth, at 20 percent, during the 1960-1980 period. However, the U.S. far surpassed the Western European nations in manufacturing employment gains.

It is significant to note that the Japanese growth was not continuous but was attributable to Japan's follower position until this nation caught up to the other industrialized nations; all of the gain in manufacturing jobs actually occurred prior to 1970. There was a slight decline in this sector's jobs over the 1970-1980 period, while the number of U.S. manufacturing jobs continued to expand, up almost 6 percent during the same period.

The slower overall U.S. growth and the manufacturing decline from 1980 to 1982 reflect the impact of the recent cyclical downturn in the U.S.

It may be argued that the poorer recent job performance of the Japanese and Western European economies is at least partially due to the adoption of industrial policies that deflected resources away from the small business sector, which in the United States is contributing to higher growth through entrepreneurship, employment expansion and innovation.

Over time, Japanese industrial policy has shifted its original post-World War II emphasis on economic recovery to economic growth during the 1950s and 1960s. During the 1970s, however, Japanese government policy increasingly sought to limit competition and to promote economies of scale and big business.¹¹ Under European industrial policies, small businesses receive a small proportion of direct government assistance. For example, the share of industrial subsidies to regions and small firms ranges from approximately 13 to 25 percent of the total subsidies provided in Great Britain, Italy, Norway, and Sweden (Table 2.13). By contrast, government rescue of specific large firms represents 30 to 50 percent of the subsidies provided in each of these countries.

Moreover, Japan and Europe are moving away from direct government subsidy and government management of the economy toward freer, competitive markets and market mechanisms. For example, these nations are now seeking to replicate the American model of venture capital sponsorship of business. In the United States, the venture capital industry is an important source of funding for business startups and expansions. The share of venture capital to startups has risen dramatically in recent years from approximately \$0.5 billion or 35 percent in 1981 to \$1.3 billion or 45 percent in 1983.¹⁴ Venture capital is a critical link in the process of entrepreneurship, business formation, and small firm expansion through innovative activity.¹⁵

¹¹U.S. Congress, Joint Economic Committee, *Industrial Policy Movement in the United States: Is It The Answer?*, 98th Cong., 2d sess., 1984, S. Pkt. 98-196, p. 46.

¹⁴"It's The Morning After for Venture Capitalists," *Business Week* (September 24, 1984), pp. 118-119.

¹⁵A summary of the venture capital process and relevant research may be found in Gerald L. Feigen, "Public Policy Affecting Entrepreneurship, Venture Capital, and Technology," a paper presented at Babson College, April 23, 1983.

Table 2.13 *Discussion of Industrial Subsidies in Great Britain 1979, 1980, Italy 1978, Norway 1979, Sweden 1979, and West Germany 1980 (Percent)*

	Great Britain 1979-80	Italy 1978	Norway 1979	Sweden 1979	West Germany 1980
General Subsidies					
Export Subsidies	19.4	31.3	3.2	9.8	8.0
R&D Subsidies	23.8	1.4	12.8	10.7	20.3
General Investment Subsidies	0.1	4.4	8.2	—	3.0
Employment Subsidies to Firms	10.8	—	2.6	2.6	—
Regional and Small Firm Support	20.0	13.4	25.2	20.3	54.8
Subtotal	64.1	50.5	52.0	43.4	86.1
Rescue Operations					
Sectoral Subsidies	4.0	—	23.1	8.1	12.1
Specific Firm Subsidies	31.9	49.5	29.9	48.5	1.8
Subtotal	35.9	49.5	48.0	56.6	13.9
Total Subsidies	100.0	100.0	100.0	100.0	100.0
Total as Percent of Gross Domestic Product					
Total as Percent of Value Added	1.0	2.6	2.0	3.5	1.6
General Subsidies as Percent of Value Added in Mining and Manufacturing	3.6	7.1	7.6	16.0	4.0
Rescue Operations as Percent of Value Added in Mining and Manufacturing	2.3	3.6	4.0	6.9	3.4
	1.3	3.5	3.6	9.1	0.6

Source: Bo Carlsson, "Industrial Subsidies in Sweden. Macro-Economic Effects and International Comparisons," *The Journal of Industrial Economics* (September 1983), as cited by Melvyn Krauss, "Europeanizing the U.S. Economy: The Enduring Appeal of the Corporatist State," *The Industrial Policy Debate*, ed. by Chalmers Johnson (San Francisco: CA Institute for Contemporary Studies, 1984), p. 70.

The component of the economy that responds most readily to structural change is small business. The arguments that support industrial policies, however, ignore the changes that are occurring by firm size. Instead, these arguments focus on data that allegedly show that the U.S. industrial base is "deindustrializing." Although the U.S. manufacturing industries are continuing to expand output, capital stock, and employment in absolute terms, there has been a decline in the relative share of employment in the manufacturing sector, thus the assertion that a decrease in manufacturing industries has occurred.

Within manufacturing, however, small firms are adding jobs in both the mature smokestack industries and the new high-technology industries, indicating that small firms are redistributing resources in order to expand. The high frequency of small firm innovations in manufacturing also signifies future employment opportunities.

Across industries, there is evidence of a high rate of small business births, which are expanding the population of business enterprises and creating the potential for future employment growth. Existing enterprises are generating jobs by adding branches, i.e., through establishment births, in addition to expanding within existing establishments. The entry and exit of small businesses shows their flexibility and adaptability in using resources and in responding to cyclical fluctuations. During the 1970s, the number of jobs in every major industrialized nation that has an industrial policy has not continuously increased as much as in the United States, which has no formal industrial policy.

Industrial policies are industrial strategies designed to stimulate industry performance through direct government intervention in the distribution of resources. If foreign experience is any indication of the success rate of industrial policies, such government intervention in U.S. industries is likely to have adverse effects on efficiency and distribution, which in turn could jeopardize future economic progress. Industrial strategies that have proven best for the U.S. economy are macro policies designed to provide a stable, noninflationary business environment. These policies are already facilitating the redistribution of resources through small business innovation, entrepreneurship, employment, and expansion.

Table A2.14 Employment Growth in Selected Smokestack Industries by Employment Size of Firm, 1976-1982

SIC Code	Industry	Total Employment 1976	Employment Change by Firm Size		
			Total	< 20	20-499
3312	Blast Furnaces & Steel	390,241	-61,333	1,217	6,136
3313	Electrometallurgical Products	7,475	-487	26	154
3315	Steel Wire & Related Products	35,499	-5,992	515	686
3316	Cold Finishing of Steel	36,549	2,049	490	2,096
3317	Steel Pipe & Tubes	54,064	5,995	390	830
3321	Gray Iron Foundries	144,927	-25,875	393	-7,327
3322	Malleable Iron Foundries	25,704	-4,913	42	-725
3324	Steel Investment Foundries	52,643	9,248	204	1,138
3325	Steel Foundries	52,643	16,015	910	383
3331	Primary Copper	13,645	-3,649	-6	231
3332	Primary Lead	2,167	705	25	13
3333	Primary Zinc	6,894	-2,302	91	806
3334	Primary Aluminum	46,026	1,591	21	26
3339	Primary Nonferrous Metals	10,733	900	590	440
3341	Secondary Nonferrous Metals	30,927	9,027	1,182	6,366

3351	Copper Rolling & Drawing	42,555	-7,978	26	1,608
3353	Aluminum Sheet, Plate & Foil	17,906	2,215	13	549
3354	Aluminum Extruded Products	24,063	-3,177	173	919
3355	Aluminum Rolling & Drawing	8,978	286	57	103
3356	Nonferrous Rolling & Drawing	28,688	884	362	109
3357	Nonferrous Wire Drawing	83,400	-5,795	781	917
3361	Aluminum Foundries	63,461	6,643	1,436	2,322
3362	Brass, Bronze & Copper	26,758	3,646	470	1,339
3369	Nonferrous Foundries	45,428	4,121	807	-83
3398	Metal Heat Treating	13,410	1,634	1,362	-42
3399	Primary Metal Products	23,213	-44	560	1,210
3523	Farm Machinery Equipment	173,103	-9,569	3,336	-4,934
3541	Machine Tools, Metalcutting	98,461	5,962	4,099	14
3551	Food Products Machinery	67,689	1,447	1,970	159
3711	Motor Vehicles & Car Bodies	329,846	39,091	1,529	2,283
3713	Truck & Bus Bodies	59,236	-2,911	847	-330
3714	Motor Vehicle Parts	425,739	9,124	6,307	7,193
3715	Truck Trailers	29,081	-2,012	383	-820

Source U S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table A2.15 Number of Employees and Small Business Share of Employment For Selected High Technology Industries with Fewer than 100 Employees, 1980

SIC Code	Industry	Employment		Employment Share in Small Businesses with ≤ 100 employees (Percent)	Rank
		≤ 100	Total		
Total		757,181	9,444,114	8.02	—
2812	Alkalies & Chlorine	652	50,172	1.3	90
2813	Industrial Gases	1,652	35,138	4.7	72
2816	Inorganic Pigments	1,834	6,217	29.5	14
2819	Industrial Inorganic Chemicals, n.e.c.	11,788	222,419	5.3	69
2821	Plastic Materials, Synthetic Resins	10,399	148,551	7.0	62
2822	Synthetic Rubber	2,181	7,197	30.3	13
2823	Cellulosic Man-Made Fibers	508	46,217	1.1	92
2824	Synthetic Organic Fibers, except Cellulosic	838	139,617	0.6	95
2831	Biological Products	3,128	6,397	48.9	5
2833	Medicinal Chemicals & Botanical Products	4,013	60,796	6.6	65
2834	Pharmaceutical Preparations	10,135	506,767	2.0	84
2841	Soap, Other Detergents	6,065	151,626	4.0	76
2842	Special Cleaning, Polishing Preparations	16,548	73,874	22.4	27
2843	Surface Active & Finishing Agents	1,739	3,410	51.0	4
2844	Perfumes, Cosmetics, Toilet Preparations	10,484	139,781	7.5	60
2851	Paints, Varnishes, Lacquers, Enamels	21,485	121,384	17.7	38
2861	Gum, Wood Chemicals	1,099	11,689	9.4	56
2865	Cyclic Crudes, Intermediates, Dyes	2,004	44,528	4.5	73
2869	Industrial Organic Chemicals, n.e.c.	6,454	239,033	2.7	82
2873	Nitrogenous Fertilizers	3,677	22,697	16.2	43
2874	Phosphate Fertilizers	1,329	19,540	6.8	64
2875	Fertilizers, Mixing Only	2,300	7,067	46.7	6
2879	Pesticides, Agricultural Chemicals, n.e.c.	4,645	22,550	20.6	31
2891	Adhesives, Sealants	6,035	19,646	4.2	7

2892	Explosives	529	2,351	22.5	26
2893	Printing Ink	3,305	12,377	26.7	18
2899	Chemicals, & Chemical Preparations, n e c	16,445	85,650	19.2	34
2911	Petroleum Refining	4,754	250,204	1.9	85
3031	Reclaimed Rubber	651	3,115	20.9	29
3482	Small Arms Ammunition	9,056	62,892	14.4	46
3483	Ammunition, except Small Arms, n e c	339	7,711	4.4	75
3484	Small Arms	1,988	11,427	17.4	40
3489	Ordnance & Accessories, n e c	745	5,283	14.1	47
3511	Steam, Gas, Hydraulic Turbines	1,487	78,241	1.9	86
3519	Internal Combustion Engines, n e c.	2,232	131,279	1.7	87
3531	Construction Machinery, Equipment	12,248	170,115	7.2	61
3552	Mining Machinery, Equipment	5,149	74,617	6.9	63
3533	Oil Field Machinery, Equipment	9,718	198,332	4.9	71
3534	Elevators, Moving Stairways	2,591	20,726	12.5	49
3535	Conveyors, Conveying Equipment	10,536	33,662	31.3	12
3536	Hoists, Industrial Cranes, Monorail Systems	4,054	20,472	19.8	32
3537	Industrial Trucks, Tractors, Trailers & Stackers	8,290	50,547	16.4	42
3541	Machine Tools, Metal Cutting Types	20,986	98,525	21.3	28
3542	Machine Tools, Metal Forming Types	7,881	34,871	22.6	25
3544	Special Dies, Tool Sets, Jigs & Fixtures	89,847	119,637	75.1	2
3545	Machine Tool Accessories, Measurement Devices	29,380	73,633	39.9	9
3546	Power Driven Hand Tools	2,386	40,432	5.9	66
3547	Rolling Mill Machinery Equipment	1,051	5,447	19.3	33
3549	Metalworking Machinery, n e c	5,566	23,992	23.2	23
3561	Pumps, Pumping Equipment	7,750	33,843	22.9	24
3562	Ball & Roller Bearings	1,806	53,121	3.4	77
3563	Air, Gas Compressors	2,837	18,541	15.3	44
3564	Blowers & Exhaust & Ventilation Fans	8,644	64,507	13.4	48
3565	Industrial Patterns	9,756	10,547	92.5	1
3566	Speed Changers, Drives, & Gears	4,197	36,492	11.5	53
3567	Industrial Process Furnaces, Ovens	7,323	30,261	24.2	21

Table A2.15 *Number of Employees and Small Business Share of Employment For Selected High Technology Industries with Fewer than 100 Employees, 1980—Continued*

SIC Code	Industry	Employment		Employment Share in Small Businesses with <100 employees (Percent)		Rank
		<100	Total			
3568	Mechanical Power Transmission Equipment, n.e.c.	1,523	28,202	5.4		68
3569	General Industrial Machinery, Equipment, n.e.c.	24,052	95,826	25.1		20
3573	Electronic Computing Equipment	16,057	1,003,561	1.6		89
3574	Calculating, Accounting Machines, except Electronic Computing Equipment	653	72,522	0.9		93
3576	Scales & Balances, except Laboratory	1,475	8,428	17.5		39
3579	Office Machines, n.e.c.	2,705	87,257	3.1		80
3612	Power, Distribution & Specialty Transformers	6,213	477,929	1.3		91
3613	Switchgear & Switchboard Apparatus	7,728	45,456	17.0		41
3621	Motors & Generators	5,673	126,074	4.5		74
3622	Industrial Controls	11,890	205,000	5.8		67
3623	Welding Apparatus, Electric	3,369	18,312	18.4		36
3624	Carbon, Graphite Products	902	9,697	9.3		57
3629	Electric Industrial Apparatus, n.e.c.	3,638	6,662	54.6		3
3651	Radio, TV Receiving Sets, except Communication Types	9,571	281,491	3.4		78
3652	Phonograph Records & Pre-Recorded Magnetic Tapes	8,053	28,864	27.9		17
3661	Telephone & Telegraph Apparatus	5,019	43,642	11.5		54
3662	Radio, TV Transmitting, Signaling, Detection Equipment	34,855	683,432	5.1		70
3671	Radio & TV Receiving Electron Tubes	259	1,695	15.3		45
3674	Semiconductors, Related Devices	17,073	200,853	8.5		59
3675	Electronic Capacitors	1,005	11,046	9.1		58
3676	Resistors for Electronic Applications	1,113	4,598	24.2		22
3677	Electronic Coils, Transformers & Inductors	4,035	14,058	28.7		15
3678	Connectors, Electronic Applications	841	24,747	3.4		79
3679	Electronic Components, n.e.c.	35,060	214,241	25.7		19

3721	Aircraft	1,424	474,631	0.3	96
3724	Aircraft Engines, Parts	3,720	218,803	1.7	88
3743	Railroad Equipment	1,859	88,530	2.1	83
3761	Guided Missiles, Space Vehicles	256	36,606	0.7	94
3769	Guided Missiles, Space Vehicle Parts, n.e.c.	290	669	43.3	7
3811	Engineering, Laboratory, Scientific, Research Instruments	12,375	65,478	18.9	35
3822	Automatic Environmental & Appliance Controls	6,046	51,677	11.7	52
3823	Industrial Instruments for Measurement & Display	12,833	61,697	20.8	30
3824	Fluid Meters & Counting Devices	2,247	12,279	18.3	37
3825	Instruments for Measuring & Testing Electrical Devices	9,709	80,242	12.1	51
3829	Measuring, Controlling Devices, n.e.c.	8,416	25,123	33.5	11
3832	Optical Instruments, Lenses	8,469	29,716	28.5	16
3841	Surgical, Medical Instruments & Apparatus	14,439	117,386	12.3	50
3842	Orthopedic, Prosthetic & Surgical Appliances	10,063	100,626	10.0	55
3843	Dental Equipment & Supplies	6,218	18,343	33.9	10
3861	Photographic Equipment & Supplies	11,216	400,552	2.8	81

Note n.e.c. = not elsewhere classified

The definition of high technology industries is from Amy K. Glasmeier, Peter G. Hall and Ann R. Markuson, "Recent Evidence on High Technology Industries: Spatial Tendencies. A Preliminary Investigation," prepared for the National Science Foundation and Office of Technology Assessment, draft, October 1983

Source: U.S. Small Business Administration, Small Business Data Base, unpublished data

Table A2.16 Enterprise Birth Rates by Industry Division and Employment Size of Firm, 1976-1982 (Number of Births per 100 Enterprises in 1976 Base Year)

Industry Division	Ratios by Employment Size of Firm			
	0-4	5-19	20-99	100-499
Small Business-Dominated				
Agriculture	22.2	17.3	13.9	10.4
Construction	49.2	55.0	46.6	33.1
Wholesale Trade	35.6	29.7	21.1	13.3
Retail Trade	35.2	27.4	26.2	19.1
Services	37.8	30.7	18.8	10.9
Large Business-Dominated				
Mining	49.2	55.0	46.6	33.1
Manufacturing	38.6	29.7	21.1	13.3
Transportation, Communications & Utilities	33.7	29.0	19.7	12.1
Finance, Insurance & Real Estate	31.2	24.4	17.5	11.8

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when sixty percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

Source: Calculated from preliminary data developed by Steven Lustgarten, "Firm Size and Resource Mobility" (New York: Baruch College Research Foundation, being conducted under award no. SBA-7156-OA-83).

Table A2.17 Enterprise Death Rates by Industry Division and Employment Size of Firm, 1976-1982 (Number of Deaths per 100 Enterprises in 1976 Base Year)

Industry Division	Ratios by Employment Size of Firm				
	0-4	5-19	20-99	100-499	500+
Small Business-Dominated					
Agriculture	11.6	14.1	16.3	14.7	6.1
Construction	25.2	22.8	20.3	16.7	6.0
Wholesale Trade	24.0	18.8	15.8	13.0	3.0
Retail Trade	34.1	25.4	21.7	17.9	4.1
Services	16.9	14.4	12.7	11.1	7.0
Large Business-Dominated					
Mining	21.2	22.6	21.3	16.2	6.7
Manufacturing	26.4	22.0	19.9	17.5	7.6
Transportation, Communications & Utilities	24.5	21.0	19.0	15.3	7.0
Finance, Insurance & Real Estate	13.7	12.2	13.0	18.9	11.0

Note: The U.S. Small Business Administration, Office of Advocacy defines an industry division as small business-dominated when sixty percent or more of the division's sales or employment is found in businesses with fewer than 500 employees. By this criterion, the construction, wholesale trade, retail trade, and service divisions are classified as small business-dominated.

Source: Calculated from preliminary data developed by Steven Lustgarten, "Firm Size and Resource Mobility" (New York: Baruch College Research Foundation, being conducted under award no. SBA-7156-OA-83).

Chapter 3

The Effect of Deregulation on Small Business

Synopsis

The deregulation of certain sectors of the U.S. economy has resulted in sizable benefits for small businesses. New products have been introduced and new markets have opened in formerly regulated industries. Prices have fallen, and thousands of new firms and new jobs have been created. Small firms with fewer than 100 employees have contributed a disproportionate percentage of new jobs in deregulated industries—from 52 percent in 1976–1982 to 83 percent in 1980–1982.

Deregulation has affected both sides of the economic equation. Many new small firms have begun supplying newly competitive markets in the deregulated sectors; business customers—both large and small—have been affected by price reductions and service innovations in these sectors.

The small firm employment share in deregulated industries has risen continuously since 1976. New local markets in air transportation, trucking, and financial services have increased business and employment opportunities for the small business sector. The growth of small firms in deregulated industries also helped mitigate the effects of the 1981–1982 recession.

The surge in new business formation in deregulated sectors between 1980 and 1983 is attributable to an increasingly cost-conscious business environment in which there are fewer measured economies of scale. As small firms have learned to control costs, the general absence of scale economies has made them more competitive with large firms, especially where large quantities of output and inventory are not needed. This seems to be particularly true for small airlines, small trucking firms, and small banks.

Deregulation has enhanced the bargaining position of small firms as consumers. Small businesses have benefited from lower costs, without sacrificing the quality of service, particularly in trucking, air transportation, banking, and communications. Financing options available to the small business community have increased, along with some of the costs. In the telecommunications industry, new procurement and service opportunities are open to small firms.

Increased financial, transportation, and communications options have not been without some problems for small firms. There are many unresolved issues which concern how competition will be maintained in this deregulated era. Issues such as industry concentration, merger and antitrust policy, and competition must be examined before determining deregulation's full effect on the small business sector.

Recent federal deregulation of several industries has provided benefits for the entire U.S. economy: new businesses, more jobs, better product and service innovations, and lower prices. Deregulation has evolved from the recognition that government control of the marketplace does not lead to the most efficient use of society's resources. When decisions on how much to produce and how much to charge for products and services are removed from the marketplace, the results are often overcapacity, as in the airline industry, or reduced competition, as in trucking. Consequently, consumers frequently paid higher prices because of federal intervention. Deregulation, therefore, grew out of the realization that society could no longer afford the protectionist environment of the 1930s, a time when the economy was viewed as needing more federal management. Nor could the economy continue to lose both producer efficiency and consumer welfare associated with deregulated markets.

In regulated markets, wages are higher than they would be in the absence of regulations; output is lower and excess capacity is characteristic, as in the airline and trucking industries before deregulation.

If regulation is the control of economic relationships by law, then deregulation is the removal of those laws, which leads to increased market entry and greater competition. To economists, deregulation often implies pricing based on true costs, increased output, and reduction in excess profits.¹ Rent-seeking behavior—use of regulations to maximize profit—was often effective in a regulated environment and has become less effective in a deregulated environment.

Major deregulatory actions occurred from 1970 to 1980. While the process is still continuing, enough time has passed to begin assessing the effects of deregulation on the small business sector—generally firms with fewer than 100 employees.

The effects of deregulation can be examined from the standard perspectives of supply and demand. The immediate effect of deregulation legislation was the lowering of prices in some deregulated markets because of overcapacity. New jobs and new businesses started in these

¹Elizabeth E. Bailey and William J. Baumol, "Deregulation and the Theory of Contestable Markets," *Yale Journal of Regulation* (February, 1984), pp. 111-137; hereafter, "Theory of Contestable Markets."

deregulated markets. The price effects associated with deregulation affected all firms that were customers of the firms in deregulated industries. Supply responses, however, were concentrated in those firms producing specific products and services.

As a result of deregulation, innovations from new and existing firms have been brought to market more rapidly. The products of these firms compete with products and services in other industries, extending the effects of deregulation. For example, although the real estate sector has not been deregulated, it is included for study because it competes in the investment market with the deregulated securities industry. The deregulation of transportation industries has had a similar effect on sectors that provide alternative modes of transportation.

**The Changing
Regulatory
Environment:
1970–1982**

Industry deregulation effectively began in 1970 with the first proposed railroad/trucking deregulation legislation. From 1960 to the mid-1970s, regulatory agencies such as the Interstate Commerce Commission (ICC), the Federal Communications Commission (FCC) and the Civil Aeronautics Board (CAB) incrementally began relaxing specific operating rules. In 1962, the CAB authorized the creation of 13 air taxi services. In 1975, the ICC took the first step toward deregulating trucking by ruling that rate bureaus could not protest price changes introduced by trucking firms, thereby introducing limited price competition.² In the communications sector, the FCC in 1975 began to exempt small cable TV systems with fewer than 1,000 subscribers from certain rules, on the assumption that the injury caused by the small broadcasters to larger broadcasters was minimal.³

Deregulation, therefore, started as a gradual process that had immediate benefits for small trucking firms and small cable TV operators, allowing them some initial independence in price setting. In air transportation, it allowed market entry by a new type of small business—the commuter airline.

The Railroad Revitalization and Regulatory Reform Act, passed by Congress in 1976, was the first major

²Thomas Gale Moore, "Rail and Truck Reform—The Record So Far," *Regulation*, (December, 1983) pp. 33–43; hereafter, "Rail and Truck Reform."

³Stanley M. Besen and Robert W. Crandall, "The Deregulation of Cable Television," *Law and Contemporary Problems* (January–February 1981), pp. 78–124, hereafter, "The Deregulation of Cable."

Transportation Sectors

The Railroad Revitalization and Regulatory Reform Act (1976) was the first piece of transportation deregulation legislation; it provided railroads with some limited rate-setting authority

The Airline Deregulation Act (1978) awarded routes on a first-come, first-served basis, eliminated requirements that public need be demonstrated, allowed carriers to enter one new market annually from 1979 to 1981, and phased out rate control on December 31, 1982

The Staggers Rail Act (1980) limited the Interstate Commerce Commission's jurisdiction over rates to those rates over which railroads exercise market dominance (price competition introduced)

The Motor Carrier Act (1980) eliminated entry barriers for new competition, allowed truckers to begin subsidiaries and expand into additional regional markets, phased out antitrust immunity for price fixing, eliminated requirements that public need be demonstrated, lowered restrictions on backhauls, service to intermediate points, and other operating practices, and barred protests of revenue diversions

The Household Goods Transportation Act (1980) expanded reforms of the Motor Carrier Act and permitted household goods movers to give binding price estimates and to offer new service options, such as guaranteed delivery days

The Bus Regulatory Reform Act (1982) eased market entry by allowing companies to make minimal application to the Interstate Commerce Commission to gain operating authority in many instances.

Financial Services Sectors

The Depository Institutions Deregulation and Monetary Control Act (1980) removed interest rate ceilings, allowed money market accounts, allowed mutual savings banks to make commercial, corporate, and business loans up to 5 percent of their assets; and permitted payment of interest on demand deposits

The Thrift Institutions Restructuring Act (1982) authorized savings and loans to make commercial loans up to 10 percent of their assets; allowed investments in non-residential personal property, and permitted interstate and intrastate mergers of financially troubled institutions

piece of deregulation legislation in the transportation sector. It granted railroads some freedom in rate-setting and led the ICC to exempt railroads from regulated rates for transporting fruits and vegetables. The resulting price competition increased the railroads' share of the perishables market from 11 percent in 1978 to 15 percent in 1980. The ICC also continued to ease entry in trucking

Table 3.2 *Comparison of Services Offered by Various Financial Institutions in 1960 and 1984*

	Commercial Banks		Savings & Loans		Insurance Companies		Retailers		Securities Dealers	
	1960	1984	1960	1984	1960	1984	1960	1984	1960	1984
Checking	*	*		*		*		*		*
Savings	*	*	*	*		*		*		*
Time Deposits	*	*	*	*		*		*		*
Installment Loans	*	*		*		*		*		*
Business Loans	*	*	*	*		*		*		*
Mortgage Loans	*	*	*	*		*		*		*
Credit Cards		*		*		*	*	*		*
Insurance					*	*		*		*
Stocks, Bonds, Brokerage		*		*		*		*	*	*
Underwriting									*	*
Mutual Funds						*		*	*	*
Real Estate				*		*		*		*
Interstate Facilities		*		*		*		*		*

Source: Federal Reserve Bank of Atlanta, *Economic Review* (April 1984), p. 26

during this period, and on July 1, 1980, the Motor Carrier Act was signed. One effect of these actions was a decline in the average sales price of an ICC operating license from \$398,000 in 1975 to \$4,900 in 1982.⁴

Other major legislation passed between 1976 and 1983 introduced price and service competition into airlines, trucking, and bus service, as well as virtually all financial institutions (Table 3.1). The result was major restructuring within deregulated industries.

Technological change often accompanied the passage of deregulation legislation, particularly in the financial service sector (Table 3.2). In transportation and communications, deregulation permitted more rapid marketing of innovative products and services, such as satellite communications networks, cellular phones, and innovative truck redesigns. Within a strictly regulated environment, many of these products and services could not be marketed at all (satellite communications) or could be

⁴Moore, "Rail and Truck Reform," p. 35. Entry into trucking previously required proof of a public need. This requirement was eliminated. The Motor Carrier Act lifted other restrictions affecting the ease with which firms could change rates, enter new regional markets, carry backhauls, or serve intermediate points.

lengthy regulatory approval process (cellular phones). Many of these technologically sophisticated products were marketed for the first time because of the loosening of regulatory restrictions.

The market effects of deregulation on the small business sector can be examined in two ways. The first is to examine the role of small firms as producers of deregulated services. How has deregulation changed the use of resources in deregulated sectors? The second way of studying the effects of deregulation on small firms is to examine changes in the demand for services and products from deregulated sectors and in industries that also produce substitute and complementary products.

Businesses are consumers of products and services delivered by deregulated sectors. Changes in the cost of communications, financing, and transportation caused by deregulation have affected virtually every firm, regardless of size or industry. Key questions are whether deregulation has provided small firms with enough lower cost alternative products and services to affect their profit margins, and whether relative advantages have shifted to large versus small firms, or vice versa.

While more has been written from the supply side (inside the deregulated industries) than the demand side (outside the industries), both effects should be examined, with particular emphasis on the small business sector.

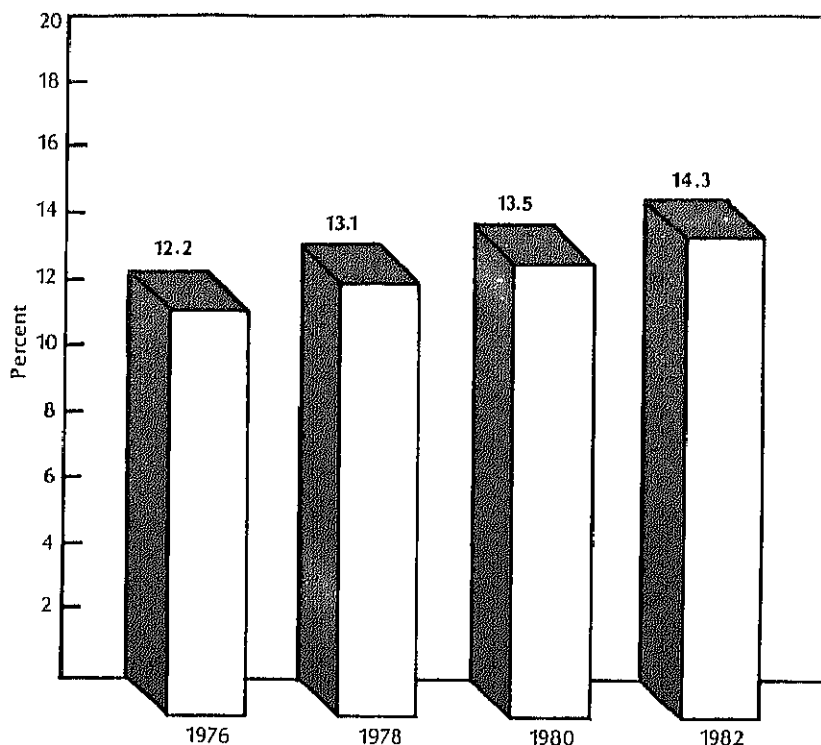
Small Firms as Suppliers in Deregulated Industries

Dramatic changes are occurring in deregulated industries. Firms have expanded rapidly in the transportation, financial services, and communications sectors, not only increasing competition, but also creating markets for new services and technologies. In some cases, deregulation has indirectly spurred growth in non-deregulated industries that compete with these sectors.

Firms in deregulated industries are employing an increasing percentage of the work force. Almost one-fourth, or 24.1 percent, of all the 12 million new jobs created in the United States between 1976 and 1982 were in deregulated sub-industries. In 1976, employment in these sub-industries was 12.2 percent of total nonfarm non-government employment, according to the Small Business Data Base (SBDB). By 1982, this percentage had risen to 14.3 percent (Chart 3.1).

The importance of the small business sector in deregulated industries has also been increasing. If small firms had contributed their proportional share of jobs in dere-

Chart 3.1 *Employment Share of Deregulated Industries in the U.S. Economy, 1976, 1978, 1980, and 1982*



Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

regulated sectors, they would have contributed 14 percent, in fact, they contributed almost twice that amount, or 24 percent. Between 1980 and 1983, the most recent period for which detailed industry data are available, new businesses in deregulated industries were predominantly small firms according to the SBDB, and they created most of the new jobs in these sectors.⁵

⁵During the past several years, small firms have also dominated growth sectors of the economy, particularly in service industries such as legal, educational, and business services, and in wholesale trade. In more capital-intensive sectors of the economy, as in mining and manufacturing, growth normally is dominated by large firms, but large firm contribution to overall growth usually declines during recessions.

Table 1. Change in the Number of Business Starts in All and Selected Deregulated Industries, 1980-1983

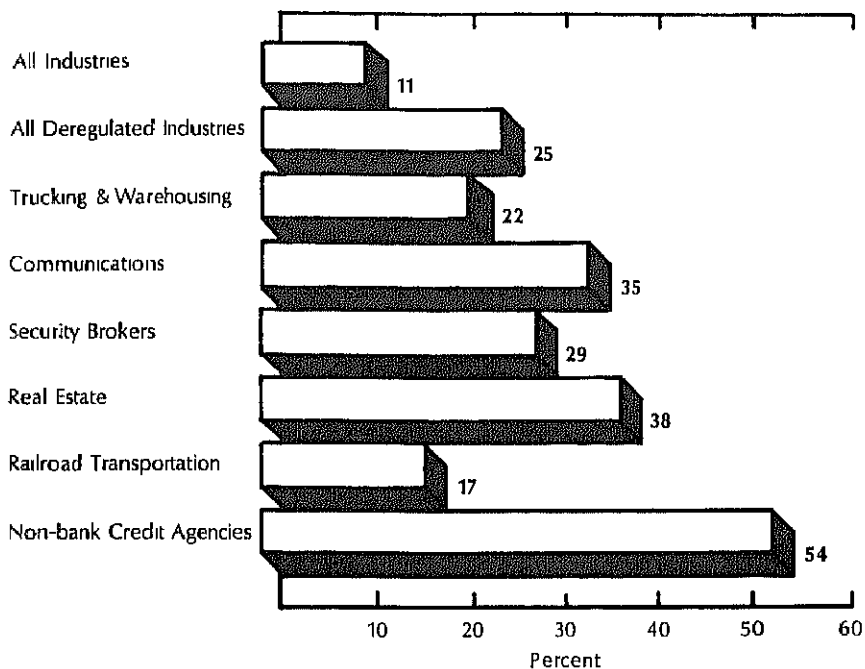
SIC Code	Major Industry Group	Annual Percent Change			
		1980	1982	1983	1982-1983
Total, All Industries		90,840	90,757	100,868	-0.0
Total, Deregulated Industries ¹		6,102	6,099	7,613	-0.0
Total, Transportation, Communications, Electric, Gas & Sanitary Services ²		2,593	2,724	3,167	2.5
40	Railroad Transportation	5	6	7	10.0
41	Local & Interurban Passenger Transportation	144	192	190	16.7
42	Trucking & Warehousing	1,182	1,094	1,332	-3.7
45	Transportation by Air	198	208	207	2.5
47	Transportation Services	567	693	744	11.1
48	Communications	241	318	428	16.0
Total, Finance, Insurance & Real Estate		3,765	3,588	4,705	-2.4
60	Banking	90	214	218	68.0
61	Credit Agencies Other Than Banks	330	312	480	-2.7
62	Security, Commodity Brokers & Services	252	332	428	16.0
64	Insurance Agents, Brokers & Services	445	485	538	4.5
65	Real Estate	2,418	1,985	2,743	-9.0
66	Combinations of Real Estate & Insurance Offices	230	260	298	6.5
Total, All Industries		90,840	90,757	100,868	-0.0
Total, Deregulated Industries ¹		6,102	6,099	7,613	-0.0
Total, Transportation, Communications, Electric, Gas & Sanitary Services ²		2,593	2,724	3,167	2.5
40	Railroad Transportation	5	6	7	10.0
41	Local & Interurban Passenger Transportation	144	192	190	16.7
42	Trucking & Warehousing	1,182	1,094	1,332	-3.7
45	Transportation by Air	198	208	207	2.5
47	Transportation Services	567	693	744	11.1
48	Communications	241	318	428	16.0
Total, Finance, Insurance & Real Estate		3,765	3,588	4,705	-2.4
60	Banking	90	214	218	68.0
61	Credit Agencies Other Than Banks	330	312	480	-2.7
62	Security, Commodity Brokers & Services	252	332	428	16.0
64	Insurance Agents, Brokers & Services	445	485	538	4.5
65	Real Estate	2,418	1,985	2,743	-9.0
66	Combinations of Real Estate & Insurance Offices	230	260	298	6.5

¹Excludes oil and gas extraction (SIC 13) for which separate statistics were unavailable.

²Detail does not add to totals because not all of the transportation and utilities sectors have been deregulated.

Source: Adapted from Dun and Bradstreet Corporation press releases, by the Office of Advocacy, U.S. Small Business Administration.

Chart 3.2 *Increase in Business Starts in All and Selected Deregulated Industries, 1982–1983*



Source: Adapted from Dun and Bradstreet Corporation, quarterly press releases, 1983–1984

*Business Starts
in Deregulated
Industries 1980–
1983*

New business starts represent a widely recognized measure of business formation.⁶ Between 1982 and 1983, business starts in deregulated components of the transportation, communications and financial services sectors rose 24.8 percent, or about twice the 11.1-percent increase in the economy (Table 3.3). Increases were most rapid in non-bank credit agencies (53.8 percent), real estate firms (38.2 percent), communications firms (34.6 percent), and trucking and warehousing companies (21.8 percent) (Chart 3.2).

⁶Business starts are a measure of firms with employees on whom a credit inquiry has been made, usually to establish trade credit. Therefore, business starts represent businesses that exist and are using the credit markets. The Dun and Bradstreet Corporation's quarterly press release on business starts is published in most newspapers and financial letters

Table 3.4 *Percent Change in the Number of Enterprises in All and Selected Deregulated Industries For Firms with Fewer than 100 Employees, 1976-1982*

Major Industry Group	Annual Percentage Point Change			
	1976-1978	1978-1980	1980-1982	1976-1982
Total, All Industries	6.0	3.1	5.0	5.1
Total, Deregulated Industries	15.5	5.8	7.3	11.3
Total, Mining	7.8	6.6	13.3	9.0
Oil and Gas Extraction	10.4	9.8	17.8	11.2
Total, Transportation				
Communications & Utilities	3.8	4.3	5.2	2.6
Railroad Transportation	-1.7	16.2	-1.2	3.4
Local & Interurban Passenger Transportation	0.4	3.5	6.0	3.4
Trucking & Warehousing	2.5	3.8	4.7	3.9
Transportation by Air	7.8	6.0	8.5	8.5
Transportation Services	11.5	6.7	7.0	9.8
Communications	2.6	4.8	4.9	4.4
Total, Finance, Insurance & Real Estate	21.4	4.8	7.0	13.0
Banking	177.5 ¹	9.2	9.7	90.5 ¹
Credit Agencies Other Than Banks	13.6	5.3	8.4	10.4
Security, Commodity Brokers & Services	11.6	3.3	10.2	9.7
Insurance Carriers	17.7	6.7	3.0	10.4
Insurance Agents, Brokers & Services	21.2	7.9	7.6	15.0
Real Estate	20.6	5.8	7.1	13.4
Combinations of Real Estate & Insurance Offices	8.7	0.5	-2.0	2.3

¹Represents coverage increase in the Small Business Data Base, and therefore is not comparable with other figures

Note: Detail is shown only for deregulated industry groups, and components therefore do not add to totals. Industry division totals are displayed for comparative purposes only.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Unweighted cross sectional files were used for this analysis, which include foreign employment of U.S. domestic corporations (5.7 million in 1982).

New businesses continued to form in deregulated industry sectors during the 1981–1982 recession. While overall business starts declined 0.1 percent annually from 1980 to 1982, new local transportation firms increased 17 percent, new transportation service firms increased 11 percent, and banking firms increased 69 percent, according to the Dun and Bradstreet Corporation. The 1980 transportation and financial services deregulation measures probably provided the impetus for new business formation during this difficult economic period.

The total number of small enterprises with fewer than 100 employees grew 5 percent annually between 1980 and 1982, compared to 3.1 percent annually from 1978 to 1980, before much of the deregulation legislation went into effect. Small firms in deregulated sub-industries increased even faster—8.9 percent annually between 1980 and 1982, compared to 4.4 percent annually between 1978 and 1980 (Table 3.4). Thus, the rates of small business formation in deregulated sectors significantly exceeded the rates of increase for all small firms in the economy for the 1976–1982 period.⁷

Many of the deregulated sectors, particularly in financial services, had rates of small business formation that substantially exceeded the national average in the latter period. On an annual basis, commodity brokerage firms increased 3.2 percent from 1978 to 1980, but 10.3 percent from 1980 to 1982. The number of non-bank credit agencies grew 8.5 percent annually from 1980 to 1982, compared with 5.2 percent from 1978 to 1980. Similar gains were posted in various deregulated transportation sectors, such as air transportation, in which the number of small firms increased 17 percent from 1980 to 1982.

The number of business establishments—individual places of business—also increased rapidly in deregulated industries between 1980 and 1982. These sectors grew by 19,323 establishments. Small firms with fewer than 20 employees were responsible for the net gain, offsetting the loss of 12,645 establishments in larger firms with 20 or more employees (Tables 3.5 and A3.17). The results in certain industries were dramatic: in transportation services, for example, there were 1,987 new small establishments in firms with fewer than 20 employees;

⁷The detailed industry employment data for all firms are shown in Tables A3.14 and A3.15 for 1978–1980 and 1980–1982. Enterprise data are available for detailed industries from the Office of Advocacy of the U.S. Small Business Administration, Washington, D.C.

Table 3.5 *Net Change in the Number of Establishments in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982*

Major Industry Group	Employment Size of Firm, 1980				
	Total	<20	20-99	100-499	500+
Total, All Industries	130,858 *	172,232	-10,879	-7,856	-22,639
Total, Deregulated Industries**	19,323	31,968	-1,508	-4,708	-6,429
Total Mining	7,283	5,306	875	265	817
Oil and Gas Extraction	8,051	5,488	1,157	398	1,007
Total Transportation, Communications & Utilities	-28	8	-1	-5	-30
Local & Interurban Passenger Transportation	461	505	-43	-16	15
Trucking & Warehousing	-1009	2,555	-974	-690	-1,900
Transportation by Air	319	337	-33	22	-7
Transportation Services	1,824	1,987	67	-103	-127
Communications	1,022	597	9	-36	452
Total, Finance, Insurance & Real Estate	-1,557	10,246	-1,688	-4,278	-5,817
Banking	-1,047	211	-162	-441	-656
Credit Agencies Other Than Banks	-2,470	662	-252	-584	-2,296
Security, Commodity Brokers & Services	1,035	1,314	33	-343	80
Insurance Carriers	-522	143	-46	-224	-395
Insurance Agents, Brokers & Services	193	1,044	-68	-378	-405
Real Estate	1,826	6,667	-1,032	-2,075	-1,735
Combinations of Real Estate & Insurance Offices	-109	-59	-17	-19	-15
Holding and Investment Offices	-464	263	-146	-214	-367

Note: Detail does not add to total because only selected industries are shown. Net employment change is derived from births of new establishments, dissolutions of establishments.

*Differs, because of rounding, from U.S. Small Business Administration, *The State of Small Business: A Report of the President, March 1984*, hereafter, *The State of Small Business, 1984*.

**Includes only the deregulated group in each of the major industry groups.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

*Economies of
Scale in
Deregulated
Sectors*

establishments in large firms with more than 100 employees declined by 230.⁸ Many of the new transportation service businesses serve the deregulated bus, rail, trucking and air transportation markets in such activities as freight forwarding, packing and crating, and moving railroad cars.⁹

The ability of small firms to enter deregulated sectors has been enhanced by an absence of measurable economies of scale. This means that as output rises, average costs do not fall; therefore, large firms gain little or no cost advantage by producing on a large scale. In several deregulated industry markets, this absence of scale economies has been the reason small firms have been able to start up and compete.

In trucking, small, efficient firms can compete with large firms because the lowest operating costs are now reached at a fairly small scale of operations. By combining loads on less-than-truckload shipments and by owning their own rail subsidiaries—efficiency measures prohibited before deregulation—small-scale trucking firms have been able to increase efficiency and reduce costs, in many cases.¹⁰ Deregulation has had a similar effect on the trucking industry in the United Kingdom. There too, scale economies were not found and many new firms were formed when trucking rates were deregulated under the Transport Act of 1968.¹¹

For railroads and airlines, an efficient scale of operations (i.e., minimum costs) has sometimes been achieved by abandoning unprofitable schedules.¹² In cable television, the continuing decline in transmission

⁸These data could not be adjusted to reflect merger and consolidation during this period. Therefore, losses of large firm establishments are overestimated and reflect consolidation activity by major corporations.

⁹Because of the Bus Regulatory Reform Act of 1982, there has been a very large increase in new bus charter firms and their terminal facilities. Many of the new charter companies serve short-haul markets from low-cost centers of operation (Table A3.21).

¹⁰Donald L. Flexner, "The Effects of Deregulation in the Motor Carrier Industry," *The Antitrust Bulletin* (Spring 1983), pp. 185–200, and Denis A. Breen, "Antitrust and Price Competition in the Trucking Industry," *The Antitrust Bulletin* (Spring 1983), pp. 201–225.

¹¹*Possibilities and Limits of Regulation in Transport Policy*. Report of the Sixty-Second Round Table on Transport Economics (Paris: Organization for Economic Cooperation and Development, 1983).

¹²In the case of railroads, the abandonment of 2 percent of unprofitable track has meant large reductions in cost.

Table 3.6 *Net Change* in Employment in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982*

Major Industry Group	Employment Size of Firm				
	Total	< 20	20-99	100-499	500 +
Total, All Industries	988,251**	2,649,690	- 1,521	- 294,581	- 1,365,337
Total, Deregulated Industries***	724,390	495,246	103,149	52,245	73,570
Total, Mining	277,623	65,246	27,699	17,854	166,834
Oil and Gas Extraction	263,602	63,012	33,785	26,751	140,054
Total, Transportation, Communications & Utilities	37,102	145,791	4,879	- 21,638	- 91,930
Railroad Transportation	- 9,873	43	3	- 964	- 8,975
Local & Interurban Passenger Transportation	- 78	14,735	- 124	- 4,860	- 9,829
Trucking & Warehousing	- 40,855	61,334	- 10,060	- 17,317	- 74,812
Transportation by Air	7,071	8,970	202	1,225	- 3,327
Transportation Services	20,359	29,101	1,355	- 1,984	- 8,113
Communications	- 10,188	15,734	10,369	5,420	- 41,711
Total, Finance, Insurance & Real Estate	494,373	302,316	33,810	- 31,312	189,558
Banking	115,334	37,055	21,726	- 7,349	63,902
Credit Agencies Other Than Banks	21,128	15,258	4,146	427	1,296
Security, Commodity Brokers & Services	78,608	22,655	7,067	4,406	44,481
Insurance Carriers	81,438	10,438	3,776	4,906	62,319
Insurance Agents, Brokers & Services	62,419	34,648	1,518	- 3,336	29,589
Real Estate	119,270	151,616	- 6,340	- 29,492	3,486
Combinations of Real Estate, & Insurance Offices	458	1,216	- 125	- 117	- 516
Holding and Investment Offices	15,717	29,431	2,042	- 757	- 14,998

Note: Detail does not add to total because only selected industries are shown.

*Net employment change is derived from births of new establishments, expansions and contractions of existing establishments, and dissolutions of establishments.

**Differs, because of rounding, from U.S. Small Business Administration, *The State of Small Business, 1984*. In addition to the job creation in deregulated sectors, the net job creation figure includes employment growth in service industries (1.23 million), retail trade (0.15 million), construction (0.1 million), agriculture (0.1 million), and the loss of jobs in manufacturing of 1.27 million and 82,000 in wholesale trade. Deregulated industry job creation figures cannot therefore be divided by all industry totals to derive net percentage contributions to growth.

***Includes only the deregulated groups in each of the major industry groups.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

costs and other technological innovations have lowered the efficient scale of operations, reduced costs, and transformed cable from a retransmission medium to an independent source of programming.¹³ Consequently, the industry has been opened to new types of cable broadcasters.

In banking, substantial evidence reveals that few economies of scale exist, and that minimum operating costs for banks occur when a bank has assets of less than \$100 million. The lowest costs are estimated for banks with assets of \$25 to \$50 million.¹⁴ The evidence of diseconomies of scale in large banks indicates that small banks have a competitive advantage that will enable them to remain viable.

The effect of mergers in achieving scale economies is not yet known. Whether mergers produce sufficient scale economies to reduce competition remains to be determined before any national policy is formulated. In regulated monopolies, like local telephone service, large economies of scale are needed to produce low-cost services. These monopolies are likely to survive alongside competitive markets, where diseconomies of scale occur before high output levels are reached.¹⁵

The past few years have shown that conventional economic measures such as concentration ratios may not be the appropriate way to measure competition in specific local product markets.¹⁶

The removal of regulatory restrictions has made it easier for businesses to enter new markets. Ease of entry and exit, smaller capital costs which are recoverable, and fewer scale economies have created a new competitive environment.¹⁷

¹³Besen and Crandell, "The Deregulation of Cable," p. 122.

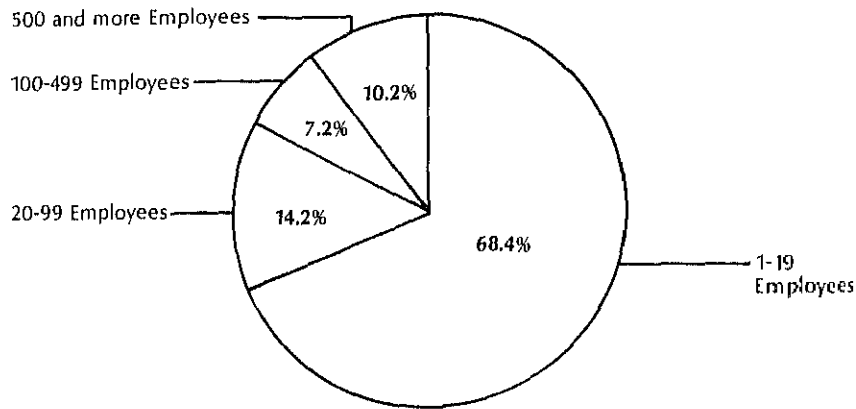
¹⁴Stephen A. Rhoades and Donald T. Savage, "Can Small Banks Compete?" *American Banker* (January–February, 1981), pp. 59–65; Donald L. Koch, "The Emerging Financial Services Industry: Challenge and Innovation," *Economic Review* (April 1984); pp. 25–30; and George G. Benston, Gerald Hanwick, and David Humphrey "Scale Economies in Banking: A Restructuring and Reassessment," *Journal of Money, Credit, and Banking* (1982), pp. 435–456.

¹⁵Donald I. Baker and Beverly G. Baker, "Antitrust and Communications Deregulation," *The Antitrust Bulletin* (Spring 1983), pp. 1–68, hereafter "Antitrust."

¹⁶Bailey and Baumol, "Theory of Contestable Markets," p. 132.

¹⁷See Richard M. Cyert, "Easing Labor's Transition Trauma," *New York Times*, July 22, 1984; Robert E. McCormick, "The Strategic Use of Regulation: A Review of the Literature," Clemson University, draft, February 1984, and Bailey and Baumol, "Theory of Contestable Markets," p. 113.

Chart 3.3 *Job Creation in Deregulated Industries by Employment Size of Firm, 1980-1982*



Total Number of Jobs Created in Deregulated Industries = 724,400

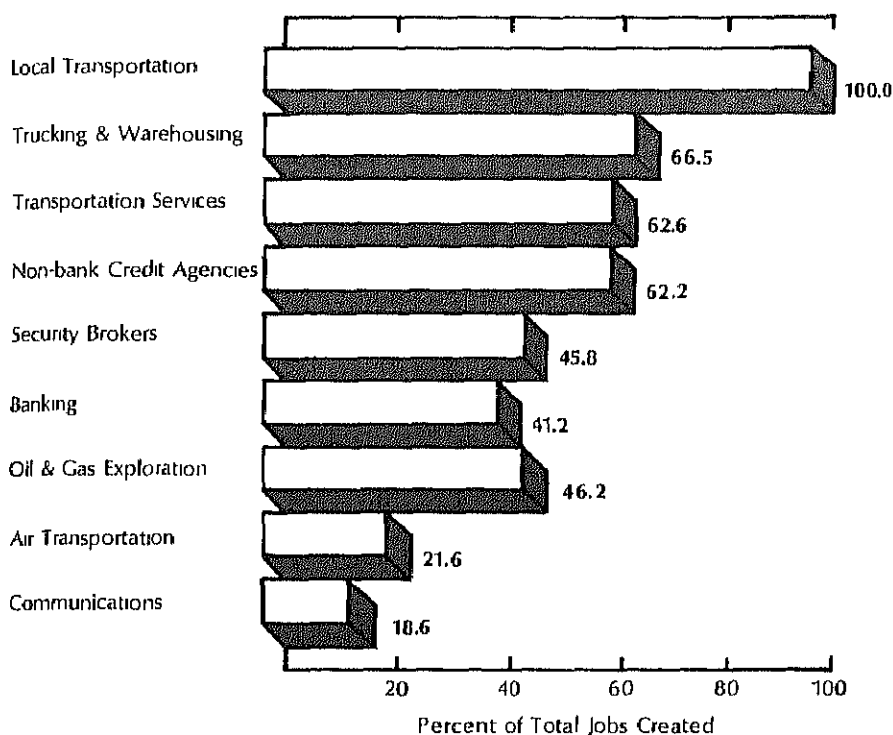
Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

*Small Firm
Dominance in
Job Generation,
1980-1982*

Small firms contributed the majority of new jobs in deregulated industries between 1980 and 1982. Firms of all sizes generated 984,000 net new jobs in the U.S. economy during this period. About 31 percent of the net new jobs were in recently deregulated industries, exceeding the 14-percent employment share of these industries in the overall economy in 1982 (Table 3.6). Small firms with fewer than 100 employees, representing 34.1 percent of total employment, contributed 82.6 percent of the new jobs in deregulated sectors.¹⁸ (Table A3.16 and Charts 3.3 and 3.4).

¹⁸Executive Office of the President, *The State of Small Business: March 1984* (Washington, D.C.: U.S. Government Printing Office, March 1984, Table A1.55); hereafter *The State of Small Business, 1984*. See also, Bruce D. Phillips, "Recession and Recovery in Pennsylvania, 1981-1983 and a Look Ahead" (Washington, D.C.: Office of Advocacy, U.S. Small Business Administration, unpublished paper, March 7, 1984).

Chart 3.4 *Small Firm Share of Net Job Creation in Selected Deregulated Industries, 1976-1982*



Note: Small firms are defined here as having fewer than 100 employees.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Small firm employment gains during 1981 and 1982 also served to mitigate the impact of the recession.¹⁹ In some deregulated sectors such as air transportation, trucking, and communications, large firms with more than 500 employees lost employees between 1980 and 1982; small firms with fewer than 20 employees helped compensate for the loss. In trucking, for example, small

¹⁹*The State of Small Business, 1984*, Chapter 1. See also Bruce D. Phillips, "The Small Firm Role in Job Creation," Office of Advocacy, U.S. Small Business Administration, unpublished paper prepared for the Small Business Economic Research Symposium held in Washington, D.C., June 7-8, 1984.

Table 3.7 Employment Shares in All and Selected Deregulated Industries For Firms with Fewer Than 100 Employees, 1976-1982

Major Industry Group	Percent Share				Annual Percentage Point Change		
	1976	1978	1980	1982	1976-1980	1980-1982	1976-1982
Total, All Industries	32.0	33.2	32.5	34.1	0.1	0.8	0.4
Total, Deregulated Industries	23.3	27.1	27.0	27.5	0.9	0.3	0.7
Total, Mining	12.4	13.6	13.8	13.3	0.4	-0.3	0.2
Oil and Gas Extraction	9.0	10.4	11.2	11.5	0.6	0.2	0.4
Total, Transportation, Communications & Utilities	19.6	20.1	20.2	21.6	0.2	0.7	0.3
Railroad Transportation	0.6	0.6	0.9	0.8	0.1	-0.1	0.0
Local & Interurban Passenger Transportation	32.2	34.3	32.1	36.2	-0.0	2.1	0.7
Trucking & Warehousing	47.8	45.2	42.9	48.0	-1.2	2.6	0.0
Transportation by Air	7.3	6.7	7.5	8.0	0.1	0.3	0.1
Transportation Services	46.6	53.0	53.4	62.2	1.7	4.4	2.6
Communications	7.3	7.6	7.8	8.2	0.1	0.2	0.2
Total, Finance, Insurance & Real Estate	22.1	28.2	32.0	33.3	2.5	0.7	2.0
Banking	11.6	30.2	29.2	29.6	4.4	0.2	3.0
Credit Agencies Other Than Banks	34.4	37.7	36.6	34.0	0.6	-1.3	-0.1
Security, Commodity Brokers & Services	24.7	27.0	25.2	21.8	0.1	-1.7	-0.5
Insurance Carriers	4.1	4.5	4.7	4.5	0.2	-0.1	0.1
Insurance Agents, Brokers & Services	57.7	64.8	64.3	67.7	1.7	1.7	1.7
Real Estate	67.5	69.8	64.2	66.2	-0.8	1.0	-0.2
Combinations of Real Estate & Insurance Offices	59.7	86.4	73.3	77.6	3.4	2.2	3.0

Note: Detail is shown only for deregulated industry groups, and components therefore do not add to totals. Major industry totals are displayed for comparative purposes only.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Unweighted cross sectional files were used for this analysis, which include foreign employment of U.S. domestic corporations (5.7 million in 1982).

firms with fewer than 20 employees gained 61,334 jobs; large firms with more than 500 employees lost 74,812 employees.²⁰ In transportation services, small firm gains of over 29,000 employees more than compensated for large firm losses of over 8,000.

Small firms with fewer than 100 employees had 27.5 percent of the jobs in deregulated sub-industries in 1982, up from 23.3 percent in 1976. The growing small firm employment share in deregulated sectors was approaching its all-industry employment share of 34.1 percent in 1982. In certain deregulated sectors, such as real estate and transportation services, the overwhelming majority of firms are small (Table 3.7 and Chart 3.5).

*Job Creation in
Deregulated
Industries by
State*

Small firms in deregulated industries helped stabilize state economies during the 1981–1982 recession. In seven of ten states sampled, employment increased more rapidly in deregulated sectors than in the overall state economy.

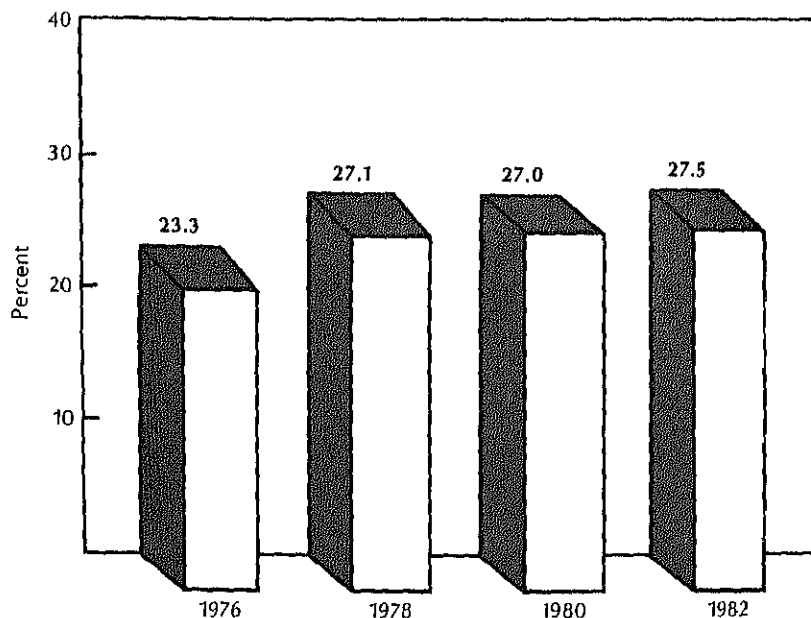
The ten states selected for an overview of industry deregulation represented coastal regions (New York and Oregon), farming areas (Iowa, Nebraska, North and South Dakota), heavily industrial areas (Indiana and Michigan), and growing western states (Utah and Alaska). The states chosen ranged in income growth from third-ranked Alaska to forty-second-ranked Iowa.²¹

In five of the six states where statewide employment declined between 1980 and 1982, it declined less or grew in deregulated sectors. Job growth in these industries helped stabilize the states' economies during the recession. For example, while employment declined 2 percent in North Dakota from 1980 to 1982, it grew 13.9 percent in North Dakota's deregulated sectors, particularly communications, trucking, and insurance. In Indiana, employment declined 4.9 percent between 1980 and 1982, but increased 3.1 percent in deregulated sectors, especially in air transportation, communications, and real estate (Chart 3.6).

²⁰These data, which come from the Small Business Data Base of the U.S. Small Business Administration, represent the net result of employment increases due to births and expansions of firms, less those jobs lost due to deaths and contractions of firms between 1980 and 1982.

²¹This was based on the growth of earned personal income between 1982 and 1983.

Chart 3.5 *Employment Share of Small Firms in Deregulated Industries, 1976, 1978, 1980 and 1982*



Note: Small firms are defined here as having fewer than 100 employees

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

The major employment gains in deregulated sectors in all ten states between 1980 and 1982 occurred in establishments with fewer than 20 employees. These establishments grew 24 percent nationally in deregulated sectors, but 32 percent in New York, 24 percent in Oregon, 28 percent in Utah, and 14 percent in Michigan. These rates of increase were two-to-three times greater than the growth rates for all industrial sectors statewide (Table 3.8)

In Iowa, 40 percent of the new jobs in small firms were in establishments with fewer than 20 employees in deregulated sectors, particularly trucking and warehousing, commodity brokerage, real estate, and banking. This 40-percent share was approximately four times the small business employment share in Iowa's deregulated industries in 1982.

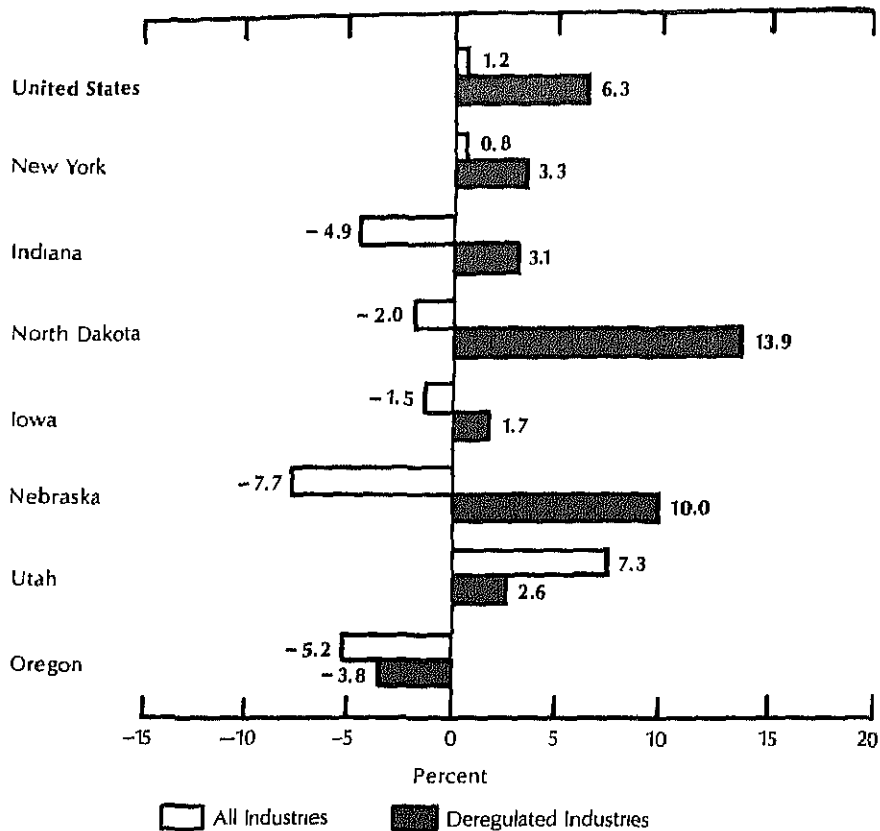
Table 3.8 *Establishment Employment Change in All and Selected Deregulated Industries for Selected States by Employment Size of Enterprise: 1980-1982 (Percent)*

State	All Establishments	Establishments with fewer than 20 employees	Establishments with fewer than 100 employees
Total, United States			
All Industries	1.2	15.4	8.5
Deregulated Industries	6.3	23.8	15.4
Alaska			
All Industries	33.0	45.0	38.4
Deregulated Industries	44.7	93.0	60.8
New York			
All Industries	0.8	14.5	8.2
Deregulated Industries	3.3	32.2	20.8
South Dakota			
All Industries	1.6	5.3	1.1
Deregulated Industries	-4.3	8.4	6.2
North Dakota			
All Industries	-2.0	5.7	2.7
Deregulated Industries	13.9	25.0	19.7
Indiana			
All Industries	-4.9	7.9	2.1
Deregulated Industries	3.1	18.5	13.1
Oregon			
All Industries	-5.2	9.1	2.0
Deregulated Industries	-3.8	24.0	12.0
Utah			
All Industries	7.3	18.7	10.9
Deregulated Industries	2.6	28.4	16.6
Nebraska			
All Industries	-7.7	7.6	3.5
Deregulated Industries	10.0	16.2	10.6
Michigan			
All Industries	-2.6	7.0	0.3
Deregulated Industries	-3.7	14.3	4.5
Iowa			
All Industries	-1.5	2.8	-1.6
Deregulated Industries	1.7	11.8	5.3

Note: Deregulated industries are defined as components of the finance, insurance and real estate division, the transportation, communications and utilities division, and oil and gas extraction in the mining division. Specific detailed industries are found in Tables 3.3 to 3.7.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Chart 3.6 *Employment Growth in All and Deregulated Industries for Selected States, 1980-1982*



Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Change in Small Firms' Sales Share in Deregulated Industries

Changes in sales shares are another key indicator of small business adaptability to industry deregulation. While on the average, small firms with fewer than 100 employees lost 1.8 percentage points of their share of sales between 1980 and 1982, those in deregulated industry sectors maintained their sales share. The movement of small firms into growing deregulated sectors during the 1981-1982 recession was another positive factor that helped

offset the effects of larger firms' employment and income losses in the manufacturing and wholesale trades.²²

In specific deregulated industry sectors, small firms increased their sales share from 1980 to 1982. In trucking and warehousing, they gained 3.3 percentage points per year or 6.6 percentage points between 1980 and 1982, after having lost sales share between 1978 and 1980. In transportation services and stock brokerage businesses, they also increased their share of sales. While small firm sales shares did not increase in every deregulated industry during 1981 and 1982, they did show gains in major sub-segments of these industries (Table 3.9).

In summary, small firms in deregulated sectors contributed about twice their proportionate share of new firms and new jobs between 1976 and 1982. The number of new small firms in deregulated sectors increased 11.3 percent annually, compared with an annual 5.2-percent increase in the number of small firms in the overall economy. Small firms with fewer than 100 employees contributed 53 percent of the new jobs in deregulated sectors between 1976 and 1982, compared to a 28-percent employment share; their employment share in these industries rose from 23.3 percent in 1976 to 27.5 percent in 1982 (Table A3.23 and Chart 3.4). Small firm sales share in deregulated industries fell slightly from 60 percent in 1976 to 58 percent in 1982, probably because of the 1981–1982 recession.²³

*Small Firm
Performance in
Specific
Deregulated
Industries*

New businesses, employment, and sales in deregulated industry sectors have increased rapidly as small firms have seized new market opportunities. Greater efficiency and productivity have benefited both the industries and the overall economy. Some of the new markets for small firms include regional air transportation; bus charter firms; installation, repair and retailing of communications equipment; and transportation service, such as freight brokerage.

²²Small firms' 58-percent share of sales in deregulated sectors exceeds their 32-percent sales share in the overall economy and is about twice their employment share. (Small firms are those with fewer than 100 employees.)

²³Sales of small firms usually fall faster in recessions than large firms and increase faster during recoveries. Sales data for the 1982–1984 period, when available, may show an increase in the small firm sales share.

Table 3.9 Sales Shares in Deregulated Industries For Firms with Fewer Than 100 Employees, 1976-1982

Major Industry Group	Percent Share				Annual Percentage Point Change		
	1976	1978	1980	1982	1976-1980	1980-1982	1976-1982
Total, All Industries	32.9	34.1	33.3	31.6	0.1	-0.9	-0.2
Total, Deregulated Industries	59.7	59.7	58.4	58.2	-0.7	-0.1	-0.8
Total, Mining	3.6	5.3	6.3	4.3	0.7	-1.0	0.2
Oil and Gas Extraction	2.2	3.5	4.5	3.2	0.6	-0.7	0.2
Total, Transportation, Communications & Utilities	16.9	17.0	16.9	15.2	0.0	-0.9	-0.3
Railroad Transportation	0.6	0.5	0.9	0.9	0.1	0.0	0.1
Local & Interurban Passenger Transportation	38.8	40.4	30.0	40.8	-2.2	2.7	0.3
Trucking & Warehousing	53.4	46.4	45.4	51.9	-2.0	3.3	-0.3
Transportation by Air	5.7	5.8	7.3	4.3	0.4	-1.5	-0.2
Transportation Services	56.9	63.2	60.7	66.9	1.0	3.1	1.7
Communications	4.4	5.1	5.3	4.7	0.2	-0.3	0.1
Total, Finance, Insurance & Real Estate	27.9	34.3	32.3	33.6	1.1	0.7	0.1
Banking	19.3	33.8	24.5	15.9	1.3	-4.3	-0.6
Credit Agencies Other Than Banks	43.9	42.5	44.5	36.8	0.2	-3.9	-1.2
Security, Commodity Brokers & Services	69.7	49.4	35.8	38.9	-8.5	1.6	-5.1
Insurance Carriers	4.9	5.6	5.4	4.1	0.1	-0.3	-0.1
Insurance Agents, Brokers & Services	77.9	81.6	75.8	75.3	-0.5	-0.3	-0.4
Real Estate	79.8	79.4	80.4	79.0	0.2	-0.7	-0.1
Combinations of Real Estate & Insurance Offices	53.5	82.7	73.6	87.6	5.0	7.0	5.7

Note: Detail is shown only for deregulated industry groups, and components therefore do not add to totals. Major industry totals are displayed for comparative purposes only.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Unweighted cross-sectional files were used for this analysis, which include foreign employment of U.S. domestic corporations (5,2 million in 1982).

Table 3.10 *Trucking Company Operating Rights Granted by the Interstate Commerce Commission, 1978–1983*

Year	New Operating Authorities ¹	All Operating Licenses	Authorities as a Percent of Existing Licenses
1978	724	16,874	4.3
1979	1,019	17,083	6.0
1980	1,844	18,045	10.2
1981	2,252	21,887	10.3
1982	1,006	25,342	4.0
1983	1,054	27,181	3.9

¹Includes common carrier, contract carrier, and broker operating authorities

Sources: Staff Report No. 9, "Highlights of Activity in the Property Motor Carrier Industry" (Office of Transportation Analysis, Interstate Commerce Commission, July 1983), and "The Effect of Regulatory Reform on the Trucking Industry: Structure, Conduct, and Performance" (Office of Policy Analysis, Interstate Commerce Commission, June 1981), Table IV-1, p. 33

Trucking

The Motor Carrier Act (MCA), passed in 1980, eased entry in the trucking industry for new firms and introduced more competitive freight rates. New entrants in the trucking industry increased rapidly, accompanied by a rise in bankruptcies and a major consolidation movement. Since 1981, the market has returned to more normal levels, although the number of new entrants remains high²⁴ (Table 3.10). More emphasis is placed on service, and price cutting is down because the industry is now pricing much closer to actual cost; excess capacity also has declined.²⁵ Most new carriers in the trucking industry lower prices selectively and strive instead for high quality service at existing rates.²⁶

In 1983, new business starts in trucking increased 21.8 percent over 1982; trucking was the eighteenth fastest growing industry, of 110 detailed industries for which Dun and Bradstreet provides data.²⁷ In addition, from

²⁴The percentage of new applications for operating authority representing new entrants rose from 11 percent between July 1980 and July 1981 to 45 percent between July 1982 and July 1983.

²⁵Interstate Commerce Commission, Office of Transportation Analysis, "Highlights of Activity in the Property Motor Carrier Industry," Staff Report No. 9. (Washington, D.C.: Interstate Commerce Commission, July 1983), hereafter "Motor Carrier Highlights, July, 1983."

²⁶*Ibid.*

²⁷Data on business starts are based on quarterly press releases from the Dun and Bradstreet Corporation, ranked by the Office of Advocacy, U.S. Small Business Administration

mid-1983 to mid-1984, there were 1,195 approvals for operating authority, an annual rate of increase of 45 percent.²⁸

The increase in trucking industry bankruptcies between 1981 and 1983 was more the result of the 1981-1982 recession than of deregulation following the passage of the MCA. Bankruptcies of local carriers, largely unaffected by the MCA, increased about as much as those of interstate carriers, which were deregulated.²⁹ If new bankruptcies in trucking had been merely a result of deregulation, the share of interstate trucking bankruptcies should have increased, but this did not occur.

Deregulation has brought several new markets to the trucking industry. Some large companies have abandoned their own private truck fleets as rates have declined, deciding instead to use small, more cost-efficient carriers. Many trucking firms will soon enter the relatively untapped market of second- and third-day guaranteed delivery (for shipments of less than 70 pounds), which will be cheaper than current air freight rates, and will offer substantial growth potential.³⁰

Before the passage of the MCA, large trucking companies controlled many routes for which small firms had no ICC operating authority. Deregulation has minimized the paperwork process for obtaining new operating authority and allowed many small firms to extend services into well-defined regional markets previously served only by large firms.

Small trucking firms have become more efficient in the new deregulated environment. Today's truckers, concerned about the additional competition brought about by deregulation—especially rail rate competition—have become more productive and price-conscious (Table A3.18). Owner/operators are using more intermodal agreements with railroads, filling trucks by combining

²⁸U.S. Congress, House of Representatives, Statement of Reese A. Taylor, Jr., Chairman, Interstate Commerce Commission, during hearings before the Surface Transportation Subcommittee of the House Public Works and Transportation Committee on Implementation of the Motor Carrier Act of 1980, June 20, 1984.

²⁹Walter Miklius, "Effect of Regulatory Reform on Motor Carrier Failures: A Preliminary Assessment," Working Paper No. 82-02, Office of Industry Policy, U.S. Department of Transportation, July 1982.

³⁰"Motor Carrier Highlights, July 1983." Many trucking firms believe that electronic transmission will in the future significantly reduce the overnight package business and increase the market for second- and third-day guaranteed delivery.

less-than-truckload shipments, and rehabilitating older facilities to decrease costs.¹¹ They are also taking advantage of the 1982 Surface Transportation Act provisions that allow longer and wider trailers. The Department of Transportation estimates that this will save trucking firms \$5 billion during 1984 and 1985.

Airlines

The Airline Deregulation Act of 1978 allows airlines to set their own fares and markets. New regional airlines have evolved from three sources: former charter operations (World Airways and Capitol Airways), former intrastate carriers (Southwest and Air Florida), and totally new airlines (Midway and People Express)¹². Between 1981 and 1983, the number of new regional airlines increased from 225 to 281, resulting in a 2.9-percentage point increase in their domestic passenger market share.¹³ These airlines have continued to penetrate the markets of major air carriers, as well as to develop new or underserved markets.

The Federal Aviation Administration estimates that regional airlines carried 46 million passengers in 1984, compared to 21.5 million in 1975. The domestic market share of regional carriers is expected to continue growing, based on recent business formation in the industry (Table 3.11 and Chart 3.7). Regional airlines' advantage over larger airlines is their superior efficiency, particularly in short-haul markets. They have increased aircraft loads from secondary airports and have pared labor costs.¹⁴ Load factors on regional airlines increased 5.5 percent between 1981 and 1983, with the smallest carriers experiencing the largest increases¹⁵ (Table 3.12).

¹¹Booz, Allen and Hamilton, *Piggyback: The Efficient Alternative for the 1980s* (New York, NY.; prepared for Transamerica Interway, 1980), pp. 14-18

¹²David R. Graham and Daniel P. Kaplan, "Airline Deregulation is Working," *Regulation* (May/June 1982), pp. 26-32.

¹³Office of the Comptroller, Civil Aeronautics Board, *CAB Air Carrier Traffic Statistics* (Washington, D.C.: Civil Aeronautics Board, December 1983 and December 1982 editions); hereafter, "Air Carrier Traffic Statistics." The data are based on revenue passenger miles statistics.

¹⁴Clinton V. Oster, Jr., "The New Entrant Airlines: Implications for Transportation Regulatory Reform" (Syracuse, N.Y.: U.S. Department of Transportation, Research Conference on Regulatory Reform in Surface Transportation, March 16-18, 1983), pp. 326-413.

¹⁵"Air Carrier Traffic Statistics," See also Warren Rose, "Three Years After Airline Passenger Deregulation in the United States: A Report Card on Trunkline Carriers," *Transportation Journal*, (1981) (12):1, pp. 51-58.

Table 3.11 *Changes in Airline Percentage Market Shares by Type of Carrier, 1981–1983*

Type of Carrier	Change		
	1981	1983	1983–1981
All Types	100.0	100.0	—
Major	87.8	85.0	-2.8
National	10.7	10.6	-0.1
Large Regional	0.7	2.9	2.2
Medium Regional (including commuters)	0.8	1.5	0.7

Note: Airlines are classified by the Civil Aeronautics Board according to their 1983 sales

Majors 1983 sales exceeding \$100 million,
 Nationals 1983 sales between \$75 and \$100 million,
 Large Regionals 1983 sales between \$10 million and \$75 million,
 Medium Regionals 1983 sales under \$10 million

Sources Office of the Comptroller, Civil Aeronautics Board, *CAB Air Carrier Traffic Statistics* (Washington, D.C.: December 1983 and December 1982), and Civil Aeronautics Board, *Air Carrier Industry Scheduled Air Traffic Statistics: Medium Regional Air Carrier Data* (Washington, D.C.: December 1983 and December 1982)

Table 3.12 *Airline Load Factors by Type of Carrier, 1981–1983*

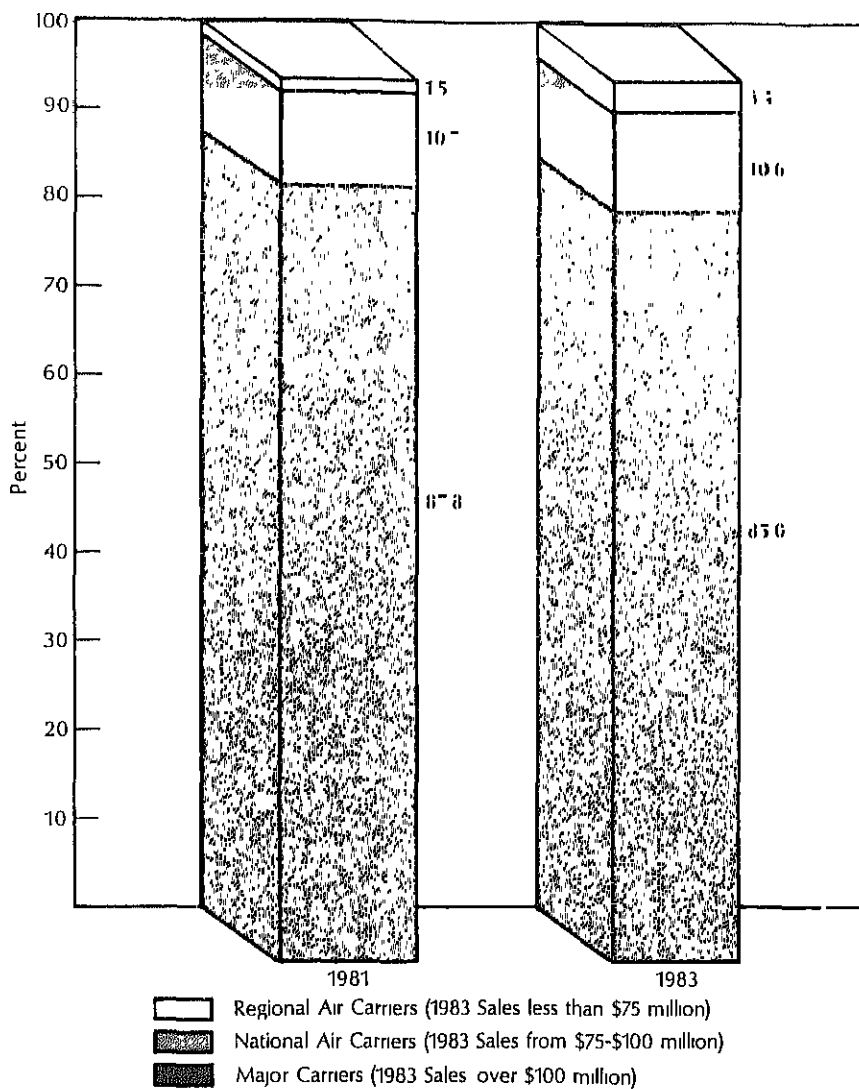
Type of Carrier	Percent of Capacity Used		Change
	1981	1983	1983–1981
All Types	52.2	54.7	2.5
Major	51.5	54.3	2.8
National	57.4	56.4	-1.0
Large Regional	52.6	58.0	5.4
Medium Regional (including commuters)	46.5	52.0	5.5

Note: Airlines are classified by the Civil Aeronautics Board according to their 1983 sales

Majors 1983 sales exceeding \$100 million;
 Nationals: 1983 sales between \$75 and \$100 million,
 Large Regionals 1983 sales between \$10 million and \$75 million,
 Medium Regionals. 1983 sales under \$10 million

Sources Office of the Comptroller, Civil Aeronautics Board, *CAB Air Carrier Traffic Statistics* (Washington, D.C.: December 1983 and December 1982), and Civil Aeronautics Board, *Air Carrier Industry Scheduled Air Traffic Statistics: Medium Regional Air Carrier Data* (Washington, D.C.: December 1983 and December 1982)

Chart 3.7 *Airline Market Shares by Type of Carrier, 1981 and 1983*



Source: Office of the Comptroller, Civil Aeronautics Board, *CAB Air Carrier Traffic Statistics* (Washington, D.C.: Civil Aeronautics Board, December 1982 and December 1983)

Labor costs as a percentage of total costs in the air transportation industry declined from 46.3 percent in 1978 to 36.6 percent in 1983.³⁶ The average payroll of new airline entrants was \$22,000 in 1984, for major carriers, it was \$42,000. Clearly new small airlines have dampened effective hourly wage increases by working longer hours and by using non-union labor, although the 1981-1982 recession also slowed wage gains.

Financial Services and Regional Expansion

Changes have been occurring rapidly in financial markets, and banking regulations have been altered to reflect these changes. In 1980, interest rate ceilings on deposits were eliminated or scheduled for phaseout during the next several years. In 1982, Congress allowed savings and loan associations and mutual savings banks to compete with money market mutual funds and to expand commercial lending powers.

Reduced regulation has opened the financial services market to a host of innovative services and institutions. In this changing climate, the market niche strategy has become key to the success of small financial institutions.³⁷ Small banks in the future may find that to remain competitive, they must tailor their services to local clients' needs, develop a particular expertise, or expand services.

Especially in rural areas, small banks are often partners in many small businesses. They provide financial advice and are able to extend credit more knowledgeably than out-of-town banks. Community banks' familiarity with local customers and their management by local boards of directors give them a competitive edge over large "out-side" institutions. Small banks in upstate New York, for example, were able to compete and survive quite well, even after New York City banks were allowed to expand into the area.³⁸

With the advent of financial supermarkets and with large money center banks increasingly involved in non-banking activities, the choice of a market becomes even

³⁶Christopher Lindsay, "Airlines Break Records for Passenger Safety in 1983," *Washington Post*, July 17, 1984, p. 13. The article is based upon the 1983 Report of the International Air Transportation Association (IATA).

³⁷Udayan Gupta, "Regional Brokers Fill a Niche," *Venture* (January 1984), p. 46.

³⁸Richard F. Syron, "The New England Experiment in Interstate Banking," *New England Economic Review* (Boston, Mass: Federal Reserve Bank of Boston, March/April 1984), pp. 5-18.

more critical to small banks.³⁹ Those small banks seeking to provide a broad range of services may need to consider alternative means of delivery, it may no longer be profitable for a small bank to offer every service. However, contractual or cooperative arrangements with providers of insurance, real estate, or securities may enable small bankers to provide lower cost services, in competition with large banks or retailers in the financial services supermarket. The small bank should at least have the legal option to choose the product market it will serve most of its large competitors have the financial resources to compete in every desired product market.⁴⁰

Increased competition places new emphasis on managing bank costs. Interest rate deregulation has allowed banks and thrift institutions to attract large accounts previously lost to money market funds when bank interest rates were regulated. Banks are now assured of access to funds, but the increased interest cost squeezes profits significantly. Well-managed banks will survive such a squeeze; less efficient banks will not.

Small banks are adapting to a less restricted geographic environment. About half the states now have some form of interstate banking, despite the Glass-Steagall Act provision prohibiting interstate branching. Seven national electronic teller networks already exist.⁴¹ Small banks utilizing the new electronic funds transfer (EFT) systems have managed to remain competitive with larger banks.

The effect of small banks' expansion in certain geographic markets is difficult to estimate. In some instances, small banks have become retailers serving smaller customers in local financial markets, while large money center banks cater to the large business and multi-state markets. Deregulation may help small banks expand their market shares by increasing savings rates in money market funds and making more funds available at

³⁹Some large money center banks, such as Norwest in the Midwest, now derive 40 percent of their income from non-banking activities.

⁴⁰U.S., Congress, House of Representatives, House Committee on Banking, Finance, and Urban Affairs, 98th Congress, 2nd ses., hearings on "How the Financial System Can Best Be Shaped to Meet the Needs of the American People," Statement of William B. Weaver, May 9, 1984, pp. 426-459.

⁴¹Thomas M. Baynds, Gerald H. Anderson, and James J. Balazsy, Jr., "Banking Without Interstate Barriers," *Economic Commentary* (Cleveland, Ohio: Federal Reserve Bank of Cleveland, March 12, 1984 Newsletter).

competitive rates.¹² However, the most critical issue for small banks remains the determination of the cost of funds in specific geographic markets.¹³

Capital regulations, bank examination criteria and restrictions on geographic and product market extensions can impose great and disproportionate burdens on smaller competitors, and affect the cost of funds. For example, a local bank newly permitted to offer a new, more competitive instrument will not be able to compete if it is subject to more stringent capital asset ratio regulations than its money center competitors. Bank examination guidelines that unfairly downgrade small business loan portfolios without justification need to be reviewed, so that small banks are not handicapped at the outset by unequal regulation.¹⁴

Decisions made by federal and state government regulators of financial service institutions can either hasten or delay the pace of beneficial developments. As regulations are reduced, it is essential that those remaining do not restrict the ability of small banks, savings and loan associations, and other small firms, to take advantage of new powers.

While significant consolidation has already occurred in the financial services industry, small local banks can and will survive with less regulation because they are innovative and cost-conscious.

Communications The AT&T divestiture has opened numerous opportunities for small firms to either sell to or buy from new telephone companies. With the breakup of AT&T, the

¹²Gillian Garcia and Annie McMahon, "Regulatory Innovation. The New Bank Accounts," *Economic Perspectives* (Chicago, Illinois: Federal Reserve Bank of Chicago, 1984), pp. 12-22. The Federal Reserve is monitoring interstate banking trends to ensure that competitive markets for both small and large banks are maintained in specific geographic areas.

¹³See "Coming Trend: Going Where the Competition Isn't?" *American Banker*, December 29, 1983, and "Profitability of Insured Commercial Banks in the First Half of 1983," *Federal Reserve Bulletin*, December 1983.

¹⁴This section has necessarily omitted a discussion of the riskiness of large versus small banks. While no definitive study is available, several studies have concluded that small banks are generally no more risky than large banks, because of the traditionally conservative role of small banks in residential real estate lending. Of those small banks that failed in 1983, the Chief National Bank Examiner attributed these failures to restrictive state laws that prohibited banks from branching and diversifying portfolios, as well as to bad management. See, in particular, *Washington Financial Reports*, January 16, 1984, p. 163.

Bell operating companies are buying telephone and electronic communications equipment from companies all over the country, rather than from Western Electric. As more telephone companies shop around for their own purchases, the opportunities for small firms to become sellers in these large markets will increase.

Sixty percent of the new firms formed in communications between 1980 and 1982 had under 20 employees; these new firms generated about half the net new jobs in communications during this period. These new small firms sell, install, and repair cable TV and satellite reception systems and sell, design, and manufacture new innovative telephone systems for businesses and consumers. As new high technology products continue to come on the market, many new small firms will form and grow in this sector.

**Small Firms as
Customers of
Deregulated
Industries**

Price declines associated with deregulation have had a strong positive influence on the small business sector. As customers of airlines, banks, telephone companies, and trucking firms, small firms emerged from the 1981–1982 recession particularly sensitive to the cost of doing business, and to ways of lowering small firm costs, which mean higher profits.

Trucking

In many industries, the cost of transporting goods is the second highest operating expense, exceeded only by labor.⁴⁵ Legislation enabling businesses to negotiate freight rates, and allowing transportation companies to supply intermodal services (combinations of rail, trucks, and barges), has been fundamental in reducing small firm costs. Transportation firms, particularly in trucking, are now using sophisticated computer modeling to help small firms determine least-cost methods of shipping between cities,⁴⁶ and freight brokers increasingly are bringing shippers and truckers together in what has now become a growth industry.⁴⁷

Wage restraint in motor transportation resulting from deregulation has helped small firm customers obtain lower rates. Truckload and less-than-truckload rates de-

⁴⁵P.T. Ellsworth and J. Clark Leith, *The International Economy* (New York: MacMillan & Co., 1975), pp. 176–184.

⁴⁶"Motor Carrier Highlights, July 1983," p.4.

⁴⁷Terrence A. Brown, "Freight Brokers and Regulatory Reform in Trucking" (Washington, D.C., Office of the Assistant Secretary for Policy and International Affairs, U.S. Department of Transportation, August 1983), pp. 39–42.

clined continuously in real terms from 1975 to 1982. But the decline accelerated immediately after the MCA passage, rates fell 13 percentage points between 1980 and 1982 for truckloads and 9 percentage points for less-than-truckload shipments (Table 3.13). Explanations for the decline include more use of non-union labor by trucking firms and the effects of the 1981-1982 recession.⁴⁸

It is not yet known if small firms have benefited more than large firms from reductions in trucking rates. If transportation costs as a percentage of total costs are larger for small firms, or for a particular group of firms, then a disproportionate impact might be expected. This determination, however, is made more difficult because of the wide variation in absolute transport costs by industry: lower costs for lighter, higher value products in labor-intensive service sectors, compared to higher costs for heavier, lower value products (per unit of weight) in capital-intensive manufacturing.

Motor carrier services to small firms have generally remained the same or improved since deregulation. On-time performance has been sustained. The range of options for sending or receiving freight was about the same eighteen months before and after motor carrier deregulation, particularly in small communities where shipments less than 500 pounds are common.⁴⁹ More shipping options, such as less-than-truckload shipments and backhauling, have benefited small firms (Table A3.19).⁵⁰

Air Transportation Airfares have declined almost continuously since the passage of the Airline Deregulation Act in 1978.⁵¹ The

⁴⁸Office of Transportation Analysis, Interstate Commerce Commission, "Highlights of Activity in the Property Motor Carrier Industry" Staff Report No. 8 (Washington, D.C.: Interstate Commerce Commission, June 1982), p. 14.

⁴⁹Office of Transportation Analysis, Interstate Commerce Commission, "Small Community Service Study" (Washington, D.C.: Interstate Commerce Commission, September 1, 1982). Richard Beilock and James Freeman, "Deregulated Motor Carrier Service to Small Communities," *Transportation Journal* (Summer 1984), pp. 71-82. See also Walter Miklius, "Effect of Regulatory Reform on Motor Carrier Quality of Service," Washington D.C.: U.S. Department of Transportation, Office of Industry Policy, Working Paper 82-04, July 1982.

⁵⁰Under regulation, trucking firms were not permitted to back haul or carry goods in opposite directions without an ICC license. This was costly and deprived all trucking firms of needed revenue.

⁵¹Airfares dropped 8.6 percent in 1978, for example, following the passage of the Airline Deregulation Act.

Table 3.13 *Real Trucking Rates, Indices, 1975–1982*

	1975	1976	1977	1978	1979	1980	1981	1982
Truckload	100	100	100	99	95	88	91	75
Less-than-truckload	100	103	105	104	101	98	91	89

Note: Sample sizes were 35 for truckload rates and 30 for less-than-truckload rates. Rates are actual rates paid by shippers.

Source: Thomas Gale Moore, "Rail and Truck Reform—The Record So Far," *Regulation* (December 1983), pp. 41–53.

decline in fares from 1978 to 1982 was associated with an increase in competition, as excess capacity diminished and air traffic declined during the 1981–1982 recession.

Deregulation has resulted in lower air travel costs; consumers strapped for cash can now travel more economically than ever before, even if more travel time is needed.⁵² The index of airfares declined 7 percent between 1981 and 1983, while the index of consumer prices rose 9 percent, making travel even cheaper today than a few years ago (Chart 3.8).

In addition, the expansion of commuter airline service to outlying communities has offered more options to small firms. Not a single community with guaranteed service has been abandoned. And while the number of flights to some large airports has fallen by 10.8 percent under deregulation, flights to small- and medium-sized airports have increased 3.6 percent and 13.1 percent, respectively.⁵³

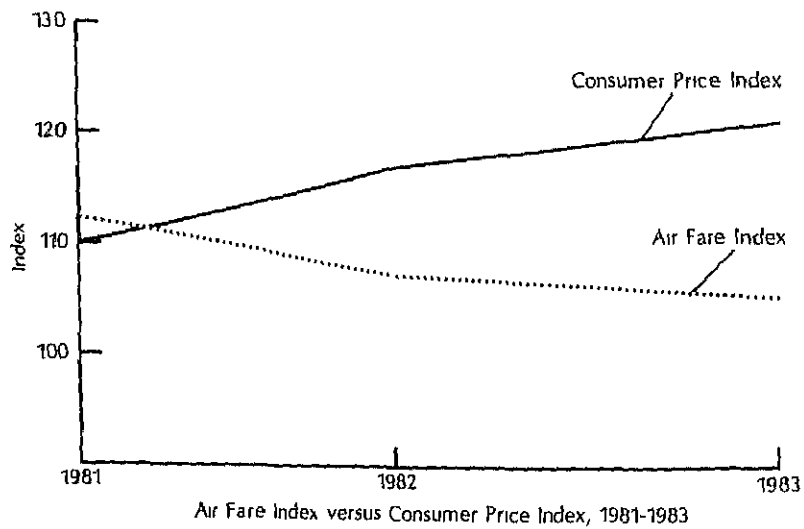
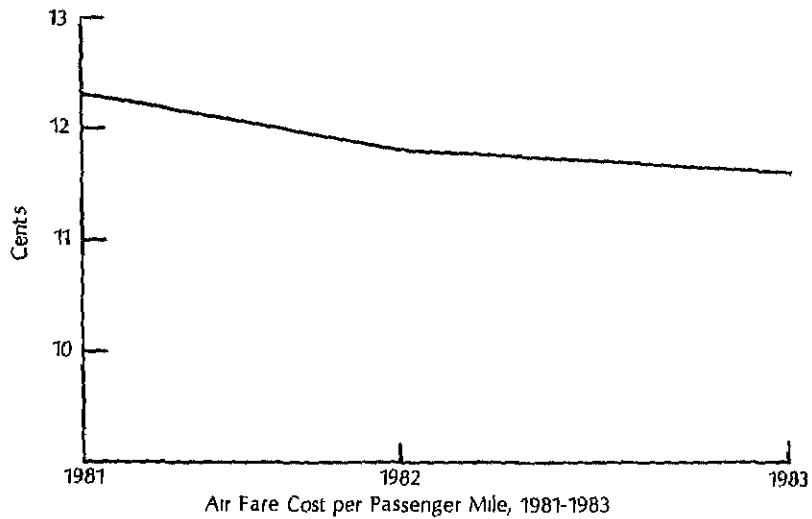
Financial Services Small firms are particularly sensitive to interest-rate fluctuations because they have higher debt/equity ratios. Consequently, the stability of credit markets is of critical importance to small business.

In the recent past, some community banks provided relatively inexpensive small business credit by taking money in at regulated rates—a little over 5 percent—and loaning it out at higher but still lower than money market rates. Community banks must now compete for deposits, and their costs have risen accordingly. Before deregula-

⁵²William N. Leonard, "Airline Deregulation: Grand Design or Gross Debacle?" *Journal of Economic Issues* (June 1983), pp. 453–462.

⁵³Edwin H. Rastatter and John A. Walgreen, "Regulatory Reform of the Intercity Bus Industry" (Syracuse, N.Y.: U.S. Department of Transportation, Conference on Regulatory Reform in Surface Transportation, June 1983).

Chart 3.8 *Comparison of Passenger Air Fare Costs and the Consumer Price Index, 1981-1983*



Note: Data apply to major and national airlines only and exclude regional carriers. See Chart 3.7.

Source: *Air Transport: 1984—The Annual Report of the Scheduled Airline Industry* (Washington, D.C.: Air Transport Association, 1984).

tion, local depositors subsidized local commercial lending. Less regulation has resulted in increased borrowing costs for some small firms because local banks no longer have this cost advantage.

A major issue in the financial markets is the relationship between the concentration of financial resources in local markets and the cost and availability of funds to small firms.⁵⁴ Concentration in banking varies widely at the state level, and even more widely on a local basis. For example, in the Kansas City district of the Federal Reserve system, the four-firm concentration ratio—the share of the market held by the four largest firms in the industry—ranged from 39 percent in Kansas City to 87 percent in Albuquerque.⁵⁵ However, this concentration does not imply that funds are more expensive for small firms in Albuquerque than in Kansas City, other factors, such as the local economic climate, may be more influential in determining interest rates.

Direct evidence is needed on the cost and availability of funds, and on industry concentration, before a consensus on a national policy can be reached. Studies are now emerging that will permit an accurate assessment of the effect of financial deregulation on small firms.⁵⁶

For the small business borrower, there are several compensations for the loss of local, sometimes cheaper money. First, small business deposits can now earn competitive returns, either through NOW accounts in a savings and loan association, cash management accounts in a brokerage firm, or money market funds. On the borrowing side, a small business can now choose from a variety of competitive sources: local and out-of-state savings and loans, non-bank lenders, and other institutions that provide traditional banking services. As depositors and borrowers, small businesses have a rapidly expand-

⁵⁴Other sources of small business credit in addition to savings and loan associations and trade credit are finance companies, leasing, factoring, and loans from shareholders.

⁵⁵Willson T. Bellington, "Bank Deregulation and Concentration—What Policy for Mergers?" *Economic Review* (Kansas City: Federal Reserve Bank of Kansas City, November 1983), pp. 3–7.

⁵⁶Under contract to the Office of Advocacy of the U.S. Small Business Administration, the University of Michigan is undertaking a pilot study of sources of small firm credit. The project, "Measuring the Flows of Capital and Credit to Small Firms," should be available in early 1985. See also Thomas M. Baynds, Gerald A. Anderson, and James J. Balazcy, Jr., "Banking Without Interstate Barriers" (Cleveland, Ohio: Federal Reserve Bank of Cleveland, March 12, 1984 Newsletter), pp. 1–4.

ing range of opportunities. To be competitive in their own industries, small firms must seek out the best financial services, products, and prices.

Compared to its effects on individual consumers, deregulation in financial services has had only a limited impact on small firms. This is because banking deregulation occurred first on the consumer side. For example, payment of interest is allowed on consumers' checking accounts but not on commercial checking accounts. The effects of financial services deregulation on small firms may increase if further steps are taken to deregulate commercial banking.

Communications

The divestiture of the Bell operating companies from AT&T has both increased the variety and cut the cost of new technology products. Satellite and data communications systems, along with other new technologies, are being implemented faster because of communications deregulation. Demand for long-distance communications services was projected to increase 14 percent in 1984 because of lower prices.⁵⁷

For consumers of telephone services, a number of problems remain to be resolved in the post-Bell era. The installation backlog of business phones hampers small firm startups. Repair of equipment is more complex, because the different components—telephone headsets, extension cords, and microwave relays—may now be owned by different companies.

While the service problems in telecommunications are probably temporary, several major regulatory issues still confront small firms. These issues include access charges for local business phones, universal product standards for equipment, and the interface among federal, state, and local regulations.⁵⁸ State telecommunications experts who understand small firms' reliance on modern telecommunications are needed to help ease the regulatory transition from the federal to state and local levels. Some states, e.g., New York and Minnesota, have already created telecommunications councils to examine the importance to local economic development of adequate telecommunications services for new small firms.

⁵⁷AT&T lowered long distance rates 6.1 percent by order of the Federal Communications Commission on May 25, 1984; GTE, Sprint, and ITT lowered their rates in September 1984.

⁵⁸The telephone access charge issue is complex. Essentially, rate increases should not reflect the needs of local operating companies to modernize the equipment used primarily by the largest business customers, but subsidized by small business customers.

*A Continuing
Small Business
Challenge*

Overall, industry deregulation appears to have favorably affected small firm customers, lowering some transportation and telecommunications operating costs while offering service innovations. However, the small business sector is facing some transition problems with deregulation that are related to determining the least-cost methods of production.⁵⁹ Some regulatory adjustments at either the federal or state levels will be needed to maintain a high level of competition among all firms, if deregulation has in fact produced non-competitive environments for small firms in selected markets. But this need for adjustment should not be twisted into simplistic calls for a return to the era of regulation. Deregulation has positively influenced the economy in general and small business in particular.⁶⁰

Conclusion

In the early 1970s, regulatory agencies such as the FCC, ICC, CAB, and the Federal Reserve began relaxing operating controls. These preliminary steps toward deregulation were followed between 1978 and 1982 by the passage of major deregulation legislation in the transportation, communications, and financial services sectors. Deregulation affected both sides of the economic equation. From the supply side, deregulation meant that many new small firms were supplying newly competitive markets in the deregulated sectors; from the demand side, business customers—both large and small—were affected by price changes and service innovations.

Small firms led the economy in creating new businesses and new jobs in deregulated industry sectors between 1980 and 1983. New local markets in air transportation, trucking, and financial services have expanded small business opportunities. The growth of small firms in deregulated industries also helped to mitigate the effects of the 1981–1982 recession. In New York State, for example, the growth of new small financial and communications service firms between 1980 and 1982 helped reduce the impact of employment declines in the manufacturing and wholesale trades on the New York economy.

⁵⁹Harvey C. Krentzman and John M. Samuras, "Can Small Business Use Consultants?" in David E. Gumpert, ed., *Growing Concerns. Building and Managing The Smaller Business* (New York: Wiley Press, 1984), pp. 243–263.

⁶⁰Robert A. Leone, "Examining Deregulation," *Harvard Business Review* (July/August 1984), pp. 51–58.

The surge in new business formation in deregulated sectors between 1980 and 1983 seems attributable to an increasingly cost-conscious business environment in which few measured economies of scale are present. As small firms have learned to better control costs, the general absence of scale economies has made small firms more competitive with large ones, especially where large quantities of output and inventory are not needed. The latter seems to be particularly true for small airlines, small trucking firms, and small banks.

Deregulation has enhanced the bargaining position of small firms as consumers. Preliminary evidence indicates that small businesses have benefited from lower costs with little change in the quality of service, particularly in trucking, air transportation, banking, and communications. Owners of small firms now find it cheaper (on an absolute basis) to ship goods and travel on business. In the telecommunications industry, new procurement and service opportunities are open to small firms. The financial options available to the small business community have increased, along with some of the costs. Small firms are taking advantage of higher deposit interest rates and more liberal loan terms in the current deregulated financial environment.

Increased financial, transportation, and communications options have not been without some problems for small firms. The effect of mergers on competition in each of the deregulated markets, and their effect on the small business sector, remains a major issue for the 1980s; additional data are needed on deregulation's effects on competition in different geographic markets and in different industries.

Overwhelming evidence shows that deregulation has helped the small business sector. Most important, it has created new markets and caused price competition in markets where prices were formerly regulated. There are many unresolved issues that concern how workable competition will be maintained in this deregulated era. The issues of industry concentration, merger and anti-trust policy, and competition must be more fully investigated before the effects of industry deregulation on the small business sector can be accurately determined.

Table A3.14 *Employment and Employment Change in All and Selected Deregulated Industries, 1976-1982*

Major Industry Group	1976	1978	1980	1982	Annual Percent Change		
					1976-1980	1980-1982	1976-1982
Total, All Industries	77,711,080	85,305,326	93,247,068	94,686,232	5.0	0.8	3.6
Total, Deregulated Industries	9,451,648	11,132,792	12,554,647	13,566,724	8.2	4.0	7.3
Total, Mining	1,703,284	1,800,588	2,016,787	2,624,750	4.6	15.1	9.0
Oil and Gas Extraction	1,264,444	1,335,439	1,534,544	2,113,577	4.3	18.9	11.2
Total, Transportation, Communications & Utilities	5,344,462	5,671,704	6,189,208	6,163,652	4.0	-0.2	2.6
Railroad Transportation	595,138	586,887	516,329	485,359	-3.3	-3.0	-3.1
Local & Interurban Passenger Transportation	386,743	376,463	424,443	406,465	2.4	-2.1	0.8
Trucking & Warehousing	1,093,704	1,236,097	1,407,871	1,318,322	7.2	-3.2	3.4
Transportation by Air	486,971	605,430	625,438	632,608	7.1	0.6	5.0
Transportation Services	239,641	257,838	296,007	286,550	5.9	-1.6	2.3
Communications	1,443,729	1,496,531	1,644,436	1,703,567	3.5	1.8	3.0

Table A3.14 *Employment and Employment Change in All and Selected Deregulated Industries, 1976-1982—Continued*

Major Industry Group	1976	1978	1980	1982	Annual Percent Change		
					1976-1980	1980-1982	1976-1982
Total, Finance, Insurance & Real Estate	6,126,356	7,394,626	7,092,478	7,353,626	3.9	1.8	3.3
Banking							
Credit Agencies Other Than Banks	765,083	1,442,705	1,644,434	1,751,381	28.7 ¹	3.3	21.5 ¹
Security, Commodity Brokers & Services	404,836	470,109	538,420	631,142	8.2	8.6	9.3
Insurance Carriers	220,263	230,636	266,252	363,663	5.2	18.3	6.0
Insurance Agents, Brokers & Services	1,242,596	1,409,822	1,599,104	1,689,665	7.2	2.8	10.8
Real Estate	281,803	341,981	401,713	430,363	10.6	3.6	8.8
Combinations of Real Estate & Insurance Offices	1,005,243	1,326,581	1,636,886	1,738,342	15.7	3.1	12.2
	21,454	16,273	18,570	15,720	-3.4	-7.7	-4.5

¹Represents coverage increase in the Small Business Data Base, and therefore is not comparable with other figures. Note. Detail is shown only for deregulated industry groups, and components therefore do not add to totals. Major industry totals are displayed for comparative purposes only.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Unweighted cross sectional files were used for this analysis, which include foreign employment of U.S. domestic corporations (5.7 million in 1982).

Table A3.15 Employment and Employment Change in All and Selected Deregulated Industries For Firms with Fewer Than 100 Employees, 1976-1982

Major Industry Group	1976	1978	1980	1982	Annual Percent Change		
					1976-1980	1980-1982	1976-1982
Total, All Industries	24,867,546	28,321,368	30,305,297	32,288,005	5.5	3.3	5.0
Total, Deregulated Industries	2,204,618	3,020,975	3,393,912	3,736,743	13.5	5.1	11.6
Total, Mining	211,207	244,880	278,317	349,092	7.9	12.7	10.9
Oil and Gas Extraction	113,800	138,886	171,869	243,061	12.8	20.7	18.9
Total, Transportation, Communications & Utilities	1,047,515	1,140,013	1,250,220	1,331,349	4.8	3.2	4.5
Railroad Transportation	3,571	3,521	4,649	3,883	7.5	-8.2	1.5
Local & Interurban Passenger Transportation	124,531	129,127	136,246	147,140	2.4	4.0	3.0
Trucking & Warehousing	522,791	558,716	603,977	631,476	3.9	2.3	3.5
Transportation by Air	35,549	40,564	46,908	50,609	8.0	3.9	7.1
Transportation Services	111,673	136,396	158,068	178,234	10.4	6.4	9.9
Communications	105,392	113,736	128,266	139,692	5.4	4.5	5.4

Table A3.15 *Employment and Employment Change in All and Selected Deregulated Industries For Firms with Fewer Than 100 Employees, 1976-1982—Continued*

Major Industry Group	1976	1978	1980	1982	Annual Percent Change		
					1976-1980	1980-1982	1976-1982
Total, Finance, Insurance & Real Estate	1,353,704	2,085,285	2,269,593	2,448,757	16.9	3.9	13.5
Banking	88,750	435,697 ¹	481,819	518,409	110.7 ¹	3.8	80.7 ¹
Credit Agencies Other Than Banks	139,263	177,231	197,062	214,588	10.4	4.4	9.1
Security, Commodity Brokers & Services	54,405	62,041	67,096	79,279	5.8	9.1	7.6
Insurance Carriers	50,946	63,442	75,158	76,035	11.9	0.6	8.2
Insurance Agents, Brokers & Services	162,600	221,604	258,301	291,356	14.7	6.4	13.2
Real Estate	678,539	925,954	1,050,881	1,150,782	13.7	4.8	11.6
Combinations of Real Estate & Insurance Offices	12,808	14,060	13,612	12,199	1.6	-5.2	-0.8

¹Represents coverage increase in the Small Business Data Base, and therefore is not comparable with other figures
 Note: Detail is shown only for deregulated industry groups, and components therefore do not add to totals. Major industry totals are displayed for comparative purposes only.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Unweighted cross sectional files were used for this analysis, which include foreign employment of U.S. domestic corporations (5.7 million in 1982).

Table A3.16 *Employment Change in All and Selected Deregulated Industries by Employment Size of Firm, 1980–1982*

Major Industry Group	Employment Size of Firm, 1980				
	Total	<20	20–99	100–199	500 +
Total, All Industries	1.2	15.4	-0.01	-2.5	-3.3
Total, Deregulated Industries	6.3	24.4	6.3	3.5	1.2
Total, Mining	21.2	47.8	17.6	-2.8	19.6
Oil and Gas Extraction	37.6	65.8	35.2	29.0	33.6
Total, Transportation, Communications & Utilities	0.7	21.9	0.8	-3.4	-2.5
Railroad Transportation	-13.4	20.0	0.3	-20.1	-13.2
Local & Interurban Passenger Transportation	-0.02	44.4	-0.2	-6.0	-6.4
Trucking & Warehousing	-1.9	17.8	-3.1	-6.0	-6.1
Transportation by Air	1.7	33.0	0.9	3.7	-1.0
Transportation Services	5.5	24.8	2.4	-4.1	-5.4
Communications	-0.9	23.3	13.3	7.4	-4.7
Total, Finance, Insurance & Real Estate	7.8	22.6	3.5	-3.6	6.1
Banking	7.5	21.9	8.0	-3.0	7.6
Credit Agencies Other Than Banks	3.8	15.9	3.5	0.4	0.5
Security, Commodity Brokers & Services	24.8	46.0	18.1	8.6	25.0
Insurance Carriers	6.4	34.4	7.1	4.1	5.8
Insurance Agents, Brokers & Services	8.6	17.4	1.5	-5.5	8.1
Real Estate	7.5	20.9	-1.8	-11.7	1.4
Combinations of Real Estate & Insurance Offices	2.5	12.9	2.9	-5.9	-18.9
Holding and Investment Offices	5.4	49.4	7.2	-1.6	-9.6

Note: Data are net percentage changes of the 1980 base data. Detail does not add to totals because only selected industry groups are shown.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table A3.17 *Percent Change in the Number of Establishments in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982*

Major Industry Group	Employment Size of Firm, 1980				
	Total	20	20-99	100-499	500+
Total, All Industries	2.6	4.6	-1.8	-3.4	-5.2
Total, Deregulated Industries*	2.9	7.5	-1.8	-10.3	-6.4
Total, Mining	15.1	18.9	10.5	2.9	9.9
Oil and Gas Extraction	24.7	26.7	23.8	20.5	19.8
Total, Transportation, Communications & Utilities	2.3	5.1	3.3	-6.0	3.8
Railroad Transportation	-6.7	26.1	-1.9	14.7	9.6
Local & Interurban Passenger Transportation	4.8	9.7	1.7	-1.9	1.5
Trucking & Warehousing	-0.9	3.7	6.1	9.4	10.4
Transportation by Air	3.5	6.0	-3.3	3.6	0.4
Transportation Services	5.8	8.7	1.7	6.0	-4.7
Communications	4.8	6.5	0.2	-1.8	2.1
Total, Finance, Insurance & Real Estate	-0.4	3.5	-3.2	-13.6	9.0
Banking	-2.3	1.3	-1.7	-7.4	-4.8
Credit Agencies Other Than Banks	-5.9	3.8	3.2	-13.5	18.5
Security, Commodity Brokers & Services	5.1	11.9	1.3	14.3	0.7
Insurance Carriers	-2.6	2.9	2.1	9.8	3.7
Insurance Agents, Brokers & Services	0.4	2.9	-1.4	15.7	4.4
Real Estate	0.8	3.5	-4.3	16.8	14.1
Combinations of Real Estate & Insurance Offices	-5.1	-3.4	-7.0	-20.8	19.7
Holding and Investment Offices	-2.0	1.6	7.4	-43.9	15.5

Note: Data are net percent changes of the 1980 base data. Detail does not add to total because only selected industry groups are shown.

*Includes only deregulated groups in each of the major industry groups.

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table A3.18 *Survey of Criteria Used in Motor Carrier Selection*

Factor	Average Rank	
	Mid-1981	Later Years
Reliability of delivery	1	3
Speed of delivery	2	8
Price/rate	3	1
Promptness of pickup	4	4
Loss and damage history	5	5
Tracing capability	6	6
Claims service	7	7
Timely acceptance of shipments of all sizes	8	9
Financial condition/stability	9	2
Insurance coverage	10	10

Note: Survey was based upon 130 shippers representing all firm sizes and a wide range of industries. The survey was conducted in 1981 by the Paden Company for the Interstate Commerce Commission.

Source: Interstate Commerce Commission, Office of Transportation Analysis, "Staff Report No. 8" (Washington, D.C.: U.S. Government Printing Office, June 1982), p. 19.

Table A3.19 *Studies Examining the Effects of the Motor Carrier Act of 1980*

Author	Publication	Sample Characteristics and Methodology	Conclusions
Donald Harper	"Consequences of Reform of Federal Economic Regulation of the Motor Trucking Industry," <i>Transportation Journal</i> , (1982) Vol. 24.4, pp.35-58.	Primary data source: personal interviews and mail questionnaire to 40 carriers and 49 shipper/receivers located throughout Minnesota. Methodology: contingency analysis	<ol style="list-style-type: none"> 1 Increased number of service options 2 Few 'remote point' service quality complaints 3 Some indications that rate discounting was more common for urban than for nonurban shipper/receivers
ICC, Office of Policy and Analysis	"Interim Report: Small Community Service Study," June 1981	Primary data source: 374 questionnaires returned out of 514 mailed in January 1981 by shipper/receivers in communities under 15,000 population in 10 states Methodology: contingency analysis	<ol style="list-style-type: none"> 1 Most report no change but those reporting improvements greatly outnumber those seeing no change. Shipper/receiver availability and quality of service change in advance knowledge about freight rates 2

Alice Kidder

"Economic Consequences of the 1980 Motor Carrier Act on Service to Rural Areas," Invited Paper U.S. DOT Conference on Regulatory Reform in Surface Transportation, 1983, pp. 251-273

Primary data source: two interviews (in 1979 and 1981) with 290 firms located in rural areas of South Carolina, Georgia, and North Carolina. Methodologies: contingency analysis, logit analysis

- 1 Overall improvements in service quality.
2. Somewhat greater tendency for those located in very remote areas (i.e., far from interstates) to note service deteriorations
- 3 Number of carriers and capacity has increased
- 4 General pattern of rate increases

Walter Miklins

"Effect of Regulatory Reform on Motor Carrier Quality of Service," Invited Paper U.S. DOT Conference on Regulatory Reform in Surface Transportation, 1983, pp. 299-324.

Primary data source 189 (out of 200) mail-phone surveys of shipper/receivers 1973-74, and 237 (out of 400) mail surveys in 1982. Note the sample surveys were drawn from firms in various SMSA's

- 1 Few changes in rates or service quality
2. Some increase in number of carriers offering service
3. Some initial confusion

Source: Richard Beilock and James Freeman, "Deregulated Motor Carrier Service to Small Communities," *Transportation Journal*, (Summer 1984) 23(4), pp 71-82.

(Percent) Birth (BR) and Death Rates (DR) of Firms in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982

Major Industry Group	Employment Size of Firm, 1980								
	Total			<500			500 +		
	BR	DR	Net Change	BR	DR	Net Change	BR	DR	Net Change
Total, All Industries	12.9	8.8	4.1	12.9	8.8	4.1	3.2	4.7	-1.5
Total, Deregulated Industries	12.1	7.8	4.4	12.1	7.7	4.4	0.0	0.0	-0.0
Total, Mining									
Oil and Gas Extraction	35.0	10.5	24.5	35.1	10.5	24.6	6.8	3.8	3.0
Transportation, Communications & Public Utilities									
Railroad Transportation	8.1	5.4	2.7	9.3	6.2	3.1	0.0	0.0	0.0
Local & Interurban Transportation	16.5	9.7	6.8	16.7	9.8	6.9	0.0	5.6	-5.6
Trucking & Warehousing	12.0	9.0	3.0	12.1	9.0	3.1	4.8	8.4	-3.6
Air Transportation	17.9	12.5	5.4	18.0	12.6	5.4	5.2	6.9	-1.7
Transportation Services	16.7	8.7	8.0	16.7	8.7	8.0	3.2	4.8	-1.6
Communications	13.8	8.3	5.5	13.9	8.3	5.6	5.2	1.3	3.9
Total, Finance, Insurance & Real Estate									
Banking	3.0	2.5	0.5	2.9	2.4	0.5	4.3	4.5	-0.2
Credit Agencies Other than Banks	9.6	7.7	1.9	9.6	7.7	1.9	3.6	5.4	-1.8
Security, Commodity Brokers & Services	18.7	8.3	10.4	18.8	8.3	10.5	4.8	7.3	-2.5
Insurance Carriers	8.1	7.3	0.8	8.4	7.6	0.8	2.9	3.8	-0.9
Insurance Agents, Brokers & Services	9.1	6.8	2.3	9.1	6.8	2.3	3.5	6.7	-3.2
Real Estate	3.2	2.5	0.7	3.2	2.5	0.7	2.1	5.4	-3.3
Combinations of Real Estate & Insurance Offices	3.2	5.0	-1.8	3.2	5.0	-1.8	0.0	0.0	0.0
Holding and Investment Offices	9.8	8.8	1.0	9.9	8.8	1.1	3.4	8.1	-4.7

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Based upon the 1980-1982 weighted USEEM longitudinal files. Enterprises are classified according to the 4-digit SIC establishment with the largest share of the firm's employment.

Table A3.21 *Percent Change in the Number of Establishments in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982*

SIC Code Industry	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Total, All Industries	3.8 (172,906)	5.5 (186,230)	-1.1 (-5,970)	0.8 (1,845)	-2.6 (-9,199)
Total, Selected Deregulated Industries	16.7 (10,971)	23.8 (8,136)	11.7 (1,206)	12.5 (741)	6.0 (888)
Mining					
1311 Crude Petroleum and Natural Gas	18.3	19.6	20.2	29.3	3.0
1321 Natural Gas Liquids	20.7	20.9	20.8	44.4	17.6
1381 Drilling Oil and Gas Wells	32.4	35.7	34.5	39.4	9.5
1382 Oil and Gas Exploration Services	37.9	43.0	46.3	39.3	11.7
1389 Oil and Gas Field Services, n.e.c.	31.2	39.1	20.0	21.0	21.1
Transportation, Communications & Utilities					
4013 Switching and Terminal Service	-6.1	13.3	0.0	-9.5	-7.6
4119 Local Passenger Transportation, n.e.c.	14.8	19.7	6.3	13.0	-1.9
4142 Charter Service, Except Local	17.7	26.8	5.3	-3.7	-7.7
4171 Bus Terminal Facilities	7.9	25.0	9.1	7.7	0.0
4224 Household Goods Warehousing	2.5	15.3	-6.1	-18.8	-2.7
4511 Certificated Air Transportation	0.7	20.3	-2.6	5.4	-13.8
4712 Freight Forwarding	14.3	13.1	4.7	8.3	2.8
4821 Telegraph Communication	34.8	51.5	50.0	44.4	30.6
4833 Television Broadcasting	16.5	36.0	12.7	0.9	18.7

Table A3.21 *Percent Change in the Number of Establishments in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982—Continued*

SIC Code Industry	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Finance, Insurance & Real Estate					
6025 National Banks, f.r.m.	2.4	19.3	-0.4	5.4	0.8
6032 Mutual Savings Banks, f.r.m.	3.8	14.3	-1.2	0.0	35.0
6054 Safe Deposit Companies	82.9	90.3	0.0	0.0	0.0
6163 Loan Brokers	20.3	25.8	3.4	-5.2	-2.4
6281 Security and Commodity Services	13.3	16.5	6.1	0.3	3.2
6321 Accident and Health Insurance	0.6	12.0	-2.8	-4.6	-1.2
6361 Title Insurance	4.6	13.2	-1.6	3.7	1.5
6514 Dwelling Operators, Except Apartments	11.0	12.2	0.0	-1.5	-11.1
6517 Railroad Property Lessors	1.6	15.6	50.0	-55.6	0.0
6793 Commodity Traders	8.0	11.4	5.0	10.7	-27.3

Note: Industries selected for analysis represent a sample of only the fastest growing categories within each of the deregulated groups, and are not the only industries which added new establishments during the 1980-1982 period. Numbers in parentheses in the first 2 lines of the table are number of establishments in 1982.

"n.e.c." = not elsewhere classified

"f.r.m." = Federal Reserve Members

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Data are based upon an approximate 50 percent sample of the Data Base, from the U.S. Establishment Longitudinal Microdata File (USELM). For further details regarding the creation of the USELM see "The U.S. Establishment Longitudinal Microdata File (USELM). The Weighted Integrated USELM 1976-1982 Sample," available from the Office of Advocacy. U.S. totals from the USELM will differ from previous published 1980-1982 control totals in *The State of Small Business, 1984*, because the former is based upon a sample.

Table A3.22 Percent Change in Employment in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982

SIC Code Industry	Employment Size of Firm				
	Total	<20	20-99	100-499	500 +
Total, All Industries	1.1	13.8	-0.7	-2.4	-2.1
Total, Selected Deregulated Industries	13.6	53.2	14.7	10.4	9.4
Mining					
1311 Crude Petroleum and Natural Gas	23.3	41.3	26.2	36.6	17.2
1321 Natural Gas Liquids	-7.2	-13.8	2.6	89.9	-15.1
1381 Drilling Oil and Gas Wells	27.0	77.6	43.8	11.7	15.9
1382 Oil and Gas Exploration Services	60.0	90.1	63.4	95.0	43.8
1389 Oil and Gas Field Services, n.e.c	28.0	76.7	23.8	9.0	19.0
Transportation, Communications & Utilities					
4013 Switching and Terminal Service	-12.6	12.4	5.3	-25.2	-12.0
4119 Local Passenger Transportation, n.e.c	10.9	54.3	12.5	8.2	-55.8
4142 Charter Service, Except Local	17.1	44.9	9.2	23.1	-9.9
4171 Bus Terminal Facilities	4.5	31.3	33.1	20.4	-0.9
4224 Household Goods Warehousing	-7.3	19.6	-20.0	7.3	-13.6
4511 Certificated Air Transportation	3.6	81.9	1.2	9.1	2.3
4712 Freight Forwarding	6.4	29.3	-2.8	1.5	3.4
4821 Telegraph Communication	21.2	53.1	-43.9	11.6	21.4
4833 Television Br	9.9	91.6	21.2	-1.1	9.4

Table A3.22 *Percent Change in Employment in All and Selected Deregulated Industries by Employment Size of Firm, 1980-1982—Continued*

SIC Code Industry	Employment Size of Firm				
	Total	<20	20-99	100-499	500+
Finance, Insurance & Real Estate					
6025 National Banks, f.r.m	12.0	98.9	4.0	9.1	12.5
6032 Mutual Savings Banks, f.r.m	-2.9	17.9	-1.2	-7.9	0.8
6054 Safe Deposit Companies	65.8	68.4	35.2	0.0	0.0
6163 Loan Brokers	21.2	35.0	6.1	-23.4	17.0
6281 Security and Commodity Services	28.3	36.4	11.8	19.8	33.2
6321 Accident and Health Insurance	7.0	36.9	19.5	-0.8	6.6
6361 Title Insurance	-4.8	14.0	-11.9	-1.1	-5.5
6514 Dwelling Operators, Except Apartments	7.9	15.8	-8.7	-29.9	16.4
6517 Railroad Property Lessors	-55.1	9.2	133.3	-97.3	-16.3
6793 Commodity Traders	36.4	40.5	24.6	43.6	3.6

Note: Industries selected for analysis represent a sample of only the fastest growing categories within each of the deregulated groups, and are not the only industries which added new establishments during the 1980-1982 period. Numbers in parentheses in the first 2 lines of the table are number of establishments in 1982.

n.e.c. = not elsewhere classified

f.r.m. = Federal Reserve Members

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data. Data are based upon an approximate 50 percent sample of the Data Base, from the U.S. Establishment Longitudinal Microdata File (USELM1). For further details regarding the creation of the USELM1 see "The U.S. Establishment Longitudinal Microdata File (USELM1). The Weighted Integrated USELM1 1976-1982 Sample", available from the Office of Advocacy. U.S. totals from the USELM1 will differ from previous published 1980-1982 control totals in *The State of Small Business, 1984*, because the former is based upon a sample.

Table A3.23 *Job Creation in All and Selected Deregulated Industries in Firms with Fewer Than 100 Employees, 1976-1982*

Major Industry Group	Total	Firms With Fewer Than 100 Employees	Percent of Jobs Created in Firms with Fewer than 100 Employees
Total, All Industries	11,870,978	6,251,137	52.7
Total, Deregulated Industries	1,889,623	1,006,836	53.3
Oil & Gas Extraction	313,232	144,627	46.2
Railroad Transportation	-58,018	732	100.0
Local & Interurban Transportation	7,580	11,623	100.0
Trucking & Warehousing	168,015	111,687	66.5
Air Transportation	88,804	19,908	21.6
Transportation Services	102,555	64,149	62.6
Communications	231,828	43,145	18.6
Banking	346,572	142,744	41.2
Credit Agencies Other than Banks	75,921	47,196	62.2
Security, Commodity Brokers	89,556	40,988	45.8
Insurance Carriers	203,287	45,686	22.5
Insurance Agents and Brokers	204,173	94,139	46.1
Real Estate	185,062	233,276	100.0
Combinations of Real Estate & Insurance Offices	-1,401	-449	—
Holding and Investment Offices	-67,543	8,095	100.0

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Chapter 4

Small Business Financing

Synopsis

Strong demand for funds by all sectors in the economy, including a large deficit in the federal budget, is exerting pressure on U.S. credit markets. Interest rates are still at a relatively high level, putting pressure on many firms with stagnant demand or heavy reliance on debt financing. Overall, however, financing has been available to small businesses. Small business loans by small banks and finance companies have increased substantially since late 1983 as the economy expanded.

Small businesses continue to pay a premium of 2 to 3 percent, compared to rates paid by larger businesses; however, higher risk borrowers are expected to pay a higher rate of interest. The actual range of rates paid by bank loan borrowers was wide, from below 10 percent to above 16 percent during February 1984.

Equity financing for young and fast-growing firms has increased dramatically during the past several years, contributing to the expansion of venture capital investment from 1982 to 1984. Small companies also took advantage of various regulatory and reporting changes initiated by the Securities and Exchange Commission, by issuing a record number of small offerings, initial public offerings, offerings under Form S-18 Registration, and Regulation D.

Developments in the financial services industry will have a strong impact on small business financing in the future. Competition for deposits and loans will increase as deregulation proceeds. Small financial institutions should remain an important source of financing. Increased funds and new products and services offered by these institutions should benefit most small businesses.

Introduction

Small businesses depend on financing from both internal and external sources for their successful operation and continued expansion.¹ The primary concern regarding

¹Current information is not available on the sources of internal financing to small firms, funds generated internally through retained earnings and depreciation allowances. For historical data on internal financing for small corporations, see *The State of Small Business: A Report of the President* (Washington, D.C.: Government Printing Office, March 1984, hereafter, *The State of Small Business, 1984*).

Table 4.1 *Major Borrowers in the U.S. Credit Market, 1979-Second Quarter 1984 (Billions of Dollars)*

	Federal Government	Households	Nonfinancial Business	Total ¹
1979	37.4	179.3	151.7	368.0
1980	79.2	122.1	126.1	327.4
1981	87.4	127.5	159.4	374.3
1982	161.3	94.5	117.1	372.9
1983	186.6	175.4	127.7	490.7
1984-I ²	184.1	215.2	211.5	610.8
1984-II ²	161.9	290.7	241.2	693.8

¹Total includes minor as well as major borrowers.

²Seasonally adjusted annual rates.

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Second Quarter 1984, Annual Revisions* (Washington, D.C.: Board of Governors of the Federal Reserve System, September 1984), p. 3.

external financing is access to capital at competitive rates.

The financing needs of a small business vary during different phases of the business cycle. During a recession, for example, financing is needed to relieve the pressure of built-up inventory and compensate for the lack of liquidity caused by slow sales and customer late payments. As the economy recovers and expands, credit is needed to expand inventories and accounts receivable and to acquire new equipment and facilities.

Major developments in the economy and financial markets that affected the financing activities of small businesses during the past 18 months included a dramatic business recovery and heavy borrowing by other sectors in the economy, an explosion of activity in equity markets, and deregulation and innovation in the financial services industry.

An understanding of how small businesses financed their recovery and expansion in recent years is necessary to gain a complete picture of small business in 1984. It is important to examine borrowing and lending in the economy, the flow of funds to small businesses in both the credit and equity markets, and the role of government in the financing of new businesses. How the deregulation of the financial services industry affects small financial institutions also provides a clearer view of how small business will fare in the future.

**Borrowing and
Lending in the
Credit Market
During the
Recovery of
1983-1984**

The expanded use of credit during the recent recovery was dramatic. Funds used by all sectors totaling \$526 billion in 1983 represented a 30-percent increase over 1982. Preliminary data for the second quarter of 1984 showed that borrowing has continued to accelerate (Table 4.1).

All major borrowing sectors in the economy registered a strong demand for financing. Federal Government borrowing, which increased substantially after the 1980 recession, remained at a high annual rate of \$162 billion after six quarters of the recovery. Federal budgets usually buffer a recession's impact on the economy by injecting additional spending through budgetary deficits. Therefore, the federal budget deficit usually peaks at the time of a business recession trough and declines as recovery progresses.² However, the economic recovery of the past 18 months has not produced the expected decline in the budgetary deficits.

The Government's share of total borrowing did decrease, but the relative decline is attributed to large increases in borrowing by the household and business sectors (Chart 4.1). Vigorous economic activity stimulated household and business borrowing despite relatively high interest rates.

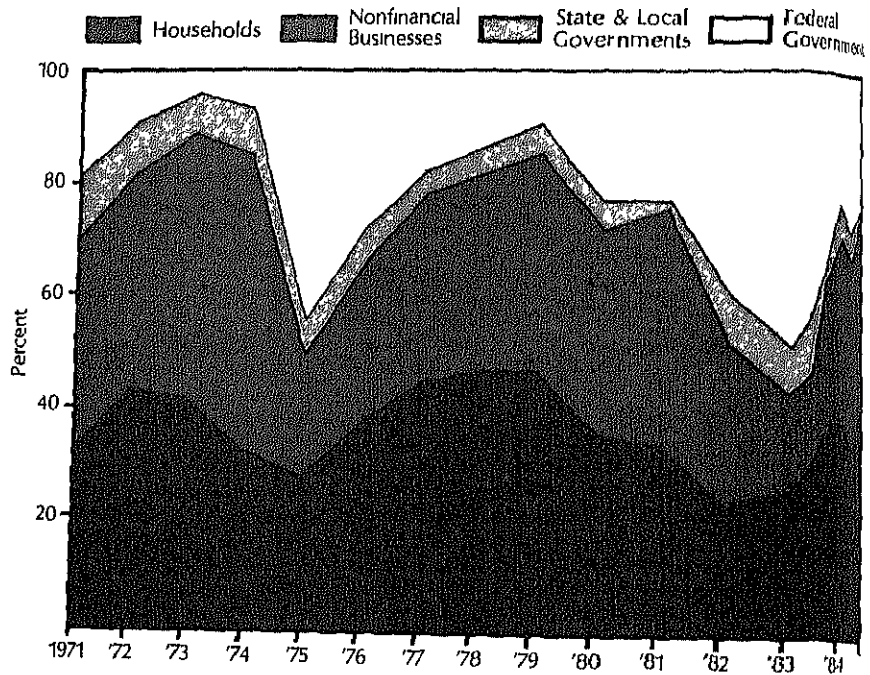
Consumers borrowed heavily in 1983 and 1984 to purchase housing and consumer durables. Installment sales credit for purchases of automobiles, furniture, and home appliances increased from an annual rate of \$23 billion during the first quarter of 1983 to \$100 billion during the second quarter of 1984.

Business borrowing in credit markets accelerated from the third quarter of 1983. The net increase in borrowing by non-financial corporations rose from an annual rate of \$128 billion in 1983 to over \$200 billion in the first and second quarters of 1984.³ (Table A4.8) Business borrowing was sluggish in 1980 through 1982 and during the first two quarters of the recovery. Increased profits and cash flows allowed for the repayment of debts during the early stages of the recovery. However, as the recovery

²To the extent that quarterly estimates of the federal budget are reliable, budgetary deficits for the fourth quarter of 1982 were at an annual rate of \$208 billion. See Federal Reserve Bank of St. Louis, *Monetary Trends* (St. Louis, MO, Federal Reserve Bank of St. Louis), September 1983, p 14.

³Board of Governors of the Federal System, *Flow of Funds Account, Second Quarter 1984, Annual Revisions* (Washington, D.C., Board of Governors of the Federal Reserve System, September 1984).

Chart 4.1 Share of Total Borrowing in the U S Credit Market by Major Sector, 1971-1984

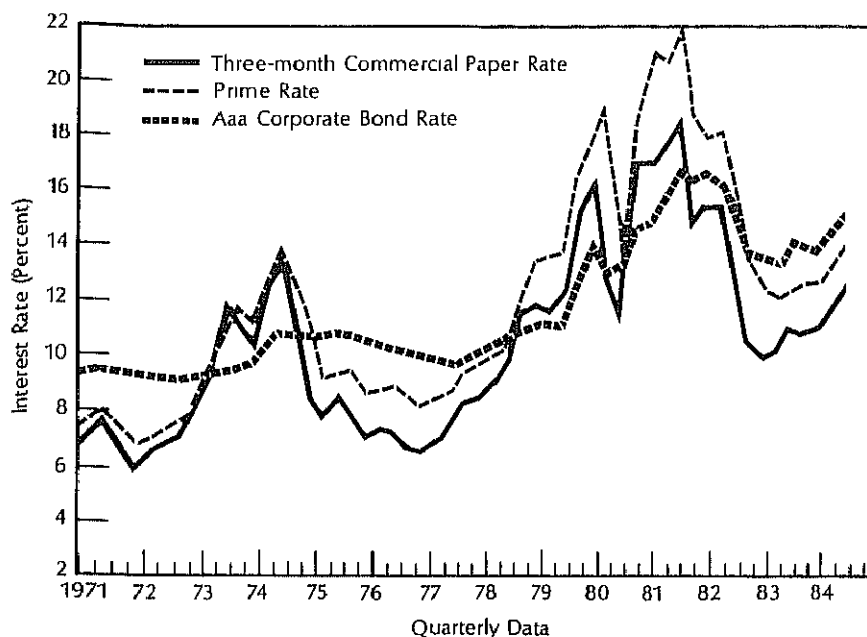


Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Second Quarter 1984, Annual Revisions* (Washington, D.C.: Board of Governors of the Federal Reserve System, April 1984).

rapidly progressed, business demand for funds to increase inventories, receivables and acquisitions of plant and equipment exceeded the available internally generated funds. Therefore, borrowing became necessary. However, borrowing in the bond market, which usually becomes more important during periods of recovery and early expansion, has increased only slightly during this recovery. Short-term borrowing in bank and other loans seems to have accounted for most of the increase.

The strong increase in the demand for credit by all major borrowers was one main reason for rising interest rates in the early stages of the recovery. Usually, interest rates do not rise until 12 to 18 months into a recovery. During this recovery, however, interest rates have risen

Chart 4.2 *Short-term and Long-term Interest Rates, 1971–1984*



Sources: Commercial Paper and Aaa Corporate Bond Rates: Federal Reserve Board, "Selected Interest Rates and Bond Prices" (Washington, D.C.: Board of Governors of the Federal Reserve System, various issues); and Prime Rate: U.S. Department of Commerce, Bureau of Economic Analysis, "Business Conditions Digest" (Washington, D.C.: Government Printing Office, various issues).

since May 1983, five months after the trough, and have remained at a relatively high level (Chart 4.2). This increase seems to have had only a limited impact on business activities, as the recovery continued at a faster rate than expected. Pent-up demand for housing, large increases in income, and the effect of the 1981–1982 tax cuts—as well as the existence of a large deficit—may explain this continued strength in the economy, despite relatively high interest rates. The rates have declined since the third quarter of 1984.

High nominal and real interest rates attracted capital from foreign countries and supplemented the supply of funds from domestic sources, such as personal savings and monetary creation. During the second quarter of

Table 4.2 *Major Sources of Funds in the U.S., 1979-Second Quarter 1984¹ (Billions of Dollars)*

	1979	1981	1983	1984-1	1984-2
Personal Saving	97	137	118	153	146
Gross Business Saving ²	323	347	370	400	407
Net Business Saving ³	-4	-58	-1	-108	-101
Net Government Saving	14	-27	-135	-107	-113
Net Imports	-13	-28	8	52	55

¹This table does not provide an accounting framework of sources of financing. Rather, it is intended to identify major sources of funds. A negative source could be interpreted as a use of funds.

²Gross business saving is defined to include total undistributed profits and total capital consumption of farms, nonfarm, noncorporate business, and corporate business.

³Net business saving is defined as gross business saving minus gross investment in multi-family units, nonresidential plant and equipment, and inventories.

Source: Compiled from Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Second Quarter 1984 Annual Revisions* (Washington, D.C.: Board of Governors of the Federal Reserve System, September 1984), p. 1.

1984, the surplus of imports over exports climbed to an annual rate of \$55 billion. A net import surplus implies an inflow of foreign savings for use in household and government consumption and business capital investment (Table 4.2). While high interest rates appeared to have little effect on businesses with strong sales, they caused difficulties for many export industries, especially the farm sector and slow-growth industries.

Financial institutions—especially banks—always have been the primary supplier of external funds to small businesses, which have limited access to organized open markets for stocks, bonds, and commercial paper. Commercial banks and savings and loan associations (S&Ls) used to experience an outflow of depository funds when open market rates exceeded regulated rates on deposits.

The elimination of ceilings on deposit rates offered by depository institutions provides a more competitive market for savings by depository institutions. High, fluctuating interest rates will have less impact on the flow of funds at these institutions. In fact, despite a relatively high interest rate, depository institutions have been competing successfully for savings funds since the deregulation of interest rates took effect in 1983.

In short, the financing environment faced by a small business during the 1983-1984 recovery was characterized by high interest rates with sufficient funds available

from financial institutions. In an economy in which sales are expected to grow, availability of funds is a major concern to small business borrowers. Although small businesses appear to be obtaining credit, certain groups, such as the housing industry and related sectors, have been affected by high interest rates. These groups are in industries where demand is sensitive to interest rates or where interest costs account for a higher percentage of sales.

Small Business Borrowing in the Credit Market

The financing needs of small businesses vary for different industries and stages of business formation. For a start-up mom-and-pop firm, financing comes mostly from private sources, such as personal savings, and loans from close relatives or friends. Because much of personal equity is in real estate, home equity financing made available by financial institutions has become an important source. For larger small businesses—or for entrepreneurs developing new products, services, means of production, or distribution channels—capital comes from financial institutions and organized venture capital firms, as well as from friends, relatives, and informal investors.

For an established firm, financing needs arise when cash inflow lags behind cash outflow because of the rise in receivables and inventory buildup. When the need to expand plant and equipment exceeds internally generated funds, demand for outside funds also arises. For short-term financing, most small firms rely on trade credit from suppliers and lines of credit from bankers.

Asset-based term loans from banks and other financial institutions, leasing, and internally generated funds (from depreciation allowances and retained earnings) are sources of capital for plant and equipment expenditures. As the economy recovers and sales increase, small business financing needs also increase. Demand for funds expands when increased sales lead to an increase in receivables, work-in-progress, finished goods inventories, and additional equipment.

Most data on small business financing are fragmented and usually not current. Limited information is available on the amounts and types of financing obtained by the small business sector during the 1983-1984 recovery. Small business borrowing intention surveys, conducted by the National Federation of Independent Business (NFIB) and by the Heller-Roper Group, indicated different financing activities for the small business sector. The NFIB survey revealed a weak demand for borrowing from

Table 4.3 *Commercial and Industrial Loans by Large Weekly Reporting and Other Commercial Banks, December 1979–June 1984 (Billions of Dollars)¹*

	All Banks	Large Weekly Reporting Banks		Other Banks	
		Amount	Percent Growth	Amount	Percent Growth
December 1979	292.4	158.1		134.3	
December 1980	325.3	176.1	11.4	149.2	11.1
December 1981	360.1	197.0	11.9	163.1	9.3
December 1982	394.7	218.5	10.9	176.2	8.0
December 1983	416.2	223.9	2.5	192.3	9.1
1983–March 1984	432.8	231.1	12.8 ²	201.7	19.6 ²
–June 1984	452.4	243.6	17.6 ²	208.8	17.2 ²

¹ Not seasonally adjusted, large weekly reporting banks are banks with domestic assets of \$1.4 billion or more on December 31, 1982.

² Annual rate of change from December 1983.

Source: Compiled from Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin* (various issues).

external sources, while the Heller survey showed a slow but steadily increasing demand for financing in response to improved sales.⁴

Business Loans from Commercial Banks

Commercial banks remain the most important suppliers of external funds and services to small business. Approximately three out of every four existing small businesses have borrowed from banks. Bank loans to small business increased steadily during 1983 and accelerated during the first six months of 1984. Outstanding commercial and industrial loans (C&I loans) to business by all commercial banks increased little during 1983 after growing at a rate of 9 to 11 percent between 1980 and 1982.

⁴ See National Federation of Independent Business, *Quarterly Economic Report for Small Business* (San Mateo, California: NFIB Research and Education Foundation, April 1984), and Heller/Roper Small Business Barometer (Chicago, Illinois: Walter Heller International Corporation Institute for Small Business) various issues.

However, C&I loans outstanding for small banks, whose loans are mostly to smaller businesses, increased 9.1 percent during 1983, compared to an increase of 2.5 percent for large weekly reporting banks (Table 4.3).⁵

Large bank lending has been subject to fluctuations in borrowing by large corporations, which borrowed extensively from banks for short-term financing during the tight-money period of 1981-1982. As interest rates declined and profits improved during the recovery, these giant corporations returned to the open markets for funding and made repayments to banks.⁶

While large bank loans to large businesses fluctuated, borrowing by small businesses from smaller banks grew steadily. As sales continued to expand, more financing was needed for additional receivables and inventories. During the first and second quarters of 1984, C&I loans outstanding for small banks increased at annual rates of more than 15 percent. Large corporations have also resumed their bank borrowing since the beginning of 1984, when their capital expenditures and external financing requirements began to increase and bond issues slackened because of uncertainties in the bond market. Short-term loans to large businesses, as reflected in bank loans of \$500,000 and more, began to increase again in February 1984 (Table A4.9).⁷

Loan Rates Charged by Banks

Loan rates paid by small businesses have declined since August 1981. This pattern is consistent with the decline in overall market rates, which edged up slightly during the second quarter of 1984 (Tables A4.11 and A4.12). During May 1984, loan rates for short-term loans under \$100,000 were approximately 14 to 15 percent (Table 4.4). These rates were relatively high, considering that

⁵Weekly reporting banks include 168 banks that had domestic office assets exceeding \$1.4 billion as of December 31, 1982. See Federal Reserve Board, Statistical Release, New E 4.2 Series, January 19, 1984.

⁶According to a survey by the Federal Reserve Board, most of the loans made by large banks to large businesses were short-term. In 1982 and 1983, 85 to 90 percent of bank loans were short-term and 85 to 90 percent of short-term loans were for \$500,000 or more. (See Tables A4.9 and A4.10.)

⁷See also Board of Governors of the Federal Reserve Board, "Survey of Terms of Bank Lending," Statistical Release E 2. The survey is best used for information on loan rates. Loan volume data from the survey for small businesses cannot be reliably estimated.

Table 4.4 *Loan Rates and Other Terms of Short-Term Loans Made During the Week of May 7-11, 1984*

	Size of Loans (Thousands of Dollars)					
	1-24	25-49	50-99	100-499	500-999	1,000 & over
48 Large Banks						
Weighted-Average Rate (Percent)	14.5	14.2	14.1	13.7	13.2	12.1
Maturity (Months)	5.0	5.4	5.2	4.3	2.8	0.7
Percent with Floating Rates	35	36	58	67	69	35
Other Banks						
Weighted-Average Rate (Percent)	15.0	14.5	14.5	13.9	13.5	12.3
Maturity (Months)	4.5	4.5	5.0	5.7	3.9	1.5
Percent with Floating Rates	32	42	52	64	70	40

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Bank Lending" (Statistical Release E 2., July 5, 1984).

the inflation rate was 4 to 5 percent.⁸ Such high real interest rates could force many small businesses into financial difficulty again in an economic slowdown.

The cost of borrowing money from banks by small businesses is the subject of much discussion. It is not uncommon to hear of one small business owner paying 5 to 7 points over the prime rate, while another firm receives a below-prime loan. This wide variation in loan rates is understandable because approximately 14,500 banks operate over 40,000 branches in the United States, making over 200,000 loans in an average week.⁹

Loan rates are generally determined by overall interest rates in the credit markets, demand and supply of funds in the local market, and the financial condition of the borrower. Loan rates usually are set by the borrower and lender and, therefore, may vary widely. For example, in the first week of February 1984, the Federal Reserve Board reported average bank interest rates of 11.06 per

⁸Small borrowers paid loan rates of 12 to 13 percent during 1979 when the economy was approaching the end of an expansion and the consumer price index was increasing at approximately 10 percent.

⁹It was estimated that for the week of May 7 through 11, 1984, 195,000 short-term loans and 36,000 term loans were made by all commercial banks in the United States. See Board of Governors of the Federal Reserve, "Survey of Terms of Bank Lending", Statistical Release E 2 (July 5, 1984).

cent for short-term commercial and industrial loans and 11.92 percent for longer term loans. But the actual range of rates varied from below 10 percent to above 16.5 percent.¹⁰

Small businesses usually pay a premium, compared to rates paid by larger businesses. Loan rates are affected by many factors: term to maturity, prior commitment, adjustable versus fixed-rate arrangement, types of collateral used, local credit market conditions, and special characteristics of borrowers and lenders. Consequently, it is difficult to determine the rate spread on size difference alone. To provide a better understanding of the size premium, i.e., how interest rates differ by the size factor alone, a statistical investigation of loan rate data collected in the Survey of Terms of Bank Lending was undertaken by the Office of Advocacy of the U.S. Small Business Administration. Preliminary findings are summarized below:¹¹

1. Loan size, commitment, floating versus fixed rate, maturity and the size of banks are important determinants of loan rates; they were found to be statistically significant in the regression estimates.¹² However, these factors explain only 30 to 50 percent of the variance in loan rates.
2. Borrowers of small loans paid higher rates during most of the period under observation, except during a tight-money period, when some small banks charged rates lower than the rates larger banks charged to large businesses.¹² On average, as loan size increases

¹⁰Estimates from the Federal Reserve Board indicated that the unweighted average for all short-term and term loans for November 1983 was 12.9, with a standard deviation of 1.66. Assuming a 2 standard deviation to the left and to the right of the mean, a range of rates between 9.58 and 16.2 results. About 95 percent of loan rates should fall within this range.

¹¹The Federal Reserve Board provided assistance in generating numerous regression estimates using data collected from the Survey of Terms of Bank Lending. Multiple regression estimates were made for each quarter for the whole period from February 1977 to November 1983. The estimated equation for all banks for February 1984 is: $16.53 - 0.339 \text{ Amount} + 0.00012 \text{ Mat-Days} - 0.317 \text{ Commit} - 0.267 \text{ Demand} - 0.063 \text{ Floating} + 0.325 \text{ Collat} - 6.84 \text{ Bk-Assets}$. For a definition of these variables and t-values, see Table A4.13.

¹²Only size of loan, rather than the size of business borrowers, is available in the data collected. For a discussion of the link between the size of loan and size of borrower, see Martha Scanlan, "Relationship Between Commercial Bank Loan Size and Size of Borrower," in *Studies of Small Business Finance*, Report to the Congress by the Interagency Task Force on Small Business Finance (Washington, D.C.: Interagency Task Force, February 1982).

from \$50,000 to \$500,000, loan rates will decrease by 80 basis points¹³

The rate spread between large and small loans changes during business cycles. During the tight-money period of 1981-1982, the spread between small and large loans narrowed. For billion-dollar asset banks, the spread narrowed to 23 basis points when loan size changed from \$50,000 to \$500,000.

3. Larger banks seem to have charged slightly higher rates for all sizes of loans during most of the period under investigation, as indicated by the positive signs for the bank size coefficient. This relationship is less ambiguous for banks with assets of \$1 billion and more. Among banks in this group, the larger the bank size, the higher the rates charged.

In summary, aside from factors such as loan size, maturity and size of bank, loan rates paid by small businesses are also determined by degree of risk (or a lender's perception of loan risk) and competition in the local market. These factors accounted for more than 50 percent of the difference in rates charged by banks. A better understanding of these factors, and particularly how the risk factor is related to rates charged by banks, would provide a better understanding of the cost of small business borrowing.

*Business Loans
by Finance
Companies*

Finance companies, or "asset-based lenders," provide financing to small businesses on loans primarily secured by either working capital assets such as inventories and receivables, or by machinery, equipment and real estate. Business lending by finance companies has increased substantially since the 1983 recovery. Total outstanding business receivables by finance companies rose 17.5 percent from December 1982 to December 1983 and at an annual rate of 19 percent from December 1983 to May 1984. This increase was observed in all types of business loans, with the possible exception of receiv-

¹³This is based on an average coefficient of 0.35 for the independent variable natural logarithm (ln) of loan size. For example, with a coefficient of -0.35, 0.35 times $\ln 50 = 1.37$ while 0.35 times $\ln 500$ will be 2.18 (loan amount unit \$1000). A loan of \$500,000 will be charged at $2.18 - 1.37 = 0.81$ percent less than a loan of \$50,000, assuming other terms of loan, such as maturity and collateral, are identical.

ables in industrial and farm equipment, which showed a small increase because the financial difficulties faced by farmers continued to depress farm implement sales (Table A4 14)

*Commercial and
Industrial Loans
by S&Ls*

Since the passage of the Depository Institutions Act of 1982 (P.L. 97-320), Federal Savings and Loan Associations (S&Ls or "thrifts") are allowed to make commercial and industrial loans up to 10 percent of an S&L's assets. How S&Ls have taken advantage of this expanded authority to offer new products is difficult to evaluate. As of March 1984, non-mortgage commercial loans (secured and unsecured) for all Federal Savings and Loan Insurance Corporation-insured institutions totaled \$4.5 billion, out of total gross loans of \$710 billion.¹⁴

New commercial loan activity has been limited so far to larger savings and loan associations. The high overhead cost of initiating a commercial loan program, especially the cost of recruiting experienced commercial loan officials, is one reason for this slow growth. Many larger S&Ls recently joined together to offer commercial loans to compete on the same scale as other major suppliers of corporate credit across the Nation.¹⁵ However, these efforts are aimed at lending to larger corporations.

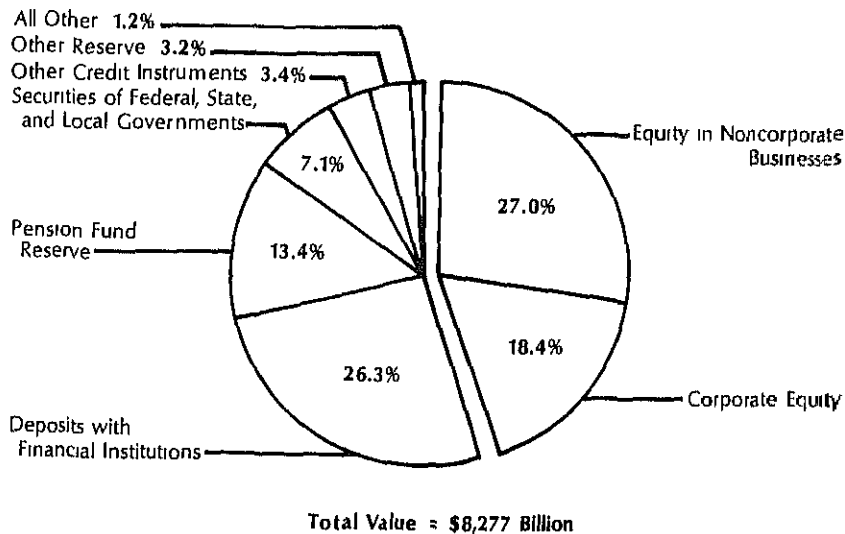
Besides the high overhead cost of initiating a commercial loan program in S&Ls, another major factor affecting the growth of S&L business lending activity is whether thrifts are allowed to accept commercial demand deposits. Statistical analysis of determinants of commercial loans by state-chartered thrift institutions in New England found that "the ability of thrifts to accept commercial demand deposits significantly affects the probability that thrifts will engage in commercial lending."¹⁶ Since the

¹⁴From Quarterly Report Aggregate Tables made available by Statistical Division, Office of Policy and Economic Research, Federal Home Loan Bank Board. This is the first issue in which commercial loans were separately listed. See also "S&L Use of New Powers: A Comparative Study of State and Federal-Chartered Associations," *Economic Review* (Atlanta, Georgia: Federal Reserve Bank of Atlanta, October 1984), pp. 18-23.

¹⁵"How Three S&Ls Have Found Salvation In Their Own Financial Services Firm," *American Banker*, September 28, 1984, p. 16.

¹⁶Constance Dunham and M. E. Guerin-Calvert, "Determinants of Thrift Institutions' Commercial Lending Activity," in *Proceedings of A Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (Chicago, Ill.: Federal Reserve Bank of Chicago, May, 1983), p. 141.

Chart 4.3 *Investment in Financial Assets by Households, December 1983*



Source: Board of Governors of the Federal Reserve System, *Balance Sheets for the U.S. Economy, 1945–1983* (Washington, D.C.: Board of Governors of the Federal Reserve System, April 1984).

enactment of the Depository Institutions Act of 1982, federal savings and loan associations are authorized to accept commercial deposit accounts. As more state and federally chartered S&Ls develop commercial deposit accounts, their interest in extending commercial loans will be greatly enhanced.

Equity Capital for Small Businesses

While internal sources and financial institutions provide most of the financing for established businesses, equity investment is especially important to new and growing firms.

The sources of equity and venture financing include personal savings of entrepreneurs, which probably represent most of the equity investments for small firms; the informal investor market, which includes families, friends, and other local individuals; the more formalized venture capital industry, which represents the new institutional source of growth capital; and, finally, the public equity investors, who invest in equity-type situations

seeking higher after-tax yields on investment. Data are limited on the supply of equity capital to small business. To provide an estimate of the magnitude, it is necessary to examine household assets as well as the equity capital of the businesses.

*Equity Investment
by Household in
the United States*

Equity is ownership in a business, either through a proprietorship or partnership or through corporate common or preferred stock holdings.

Household investment in business equity increased steadily during the 1970s. Equity in noncorporate business constituted around 22 percent of the total financial asset holdings of households in 1970, and increased to 30 percent in 1981, before declining to 27 percent in 1983.¹⁷

In 1979, nearly one-third of U.S. households with annual incomes of approximately \$50,000 or more held assets in the form of business equity (in farm or nonfarm businesses).¹⁸ As of December 1983, some \$3.8 trillion, or 45 percent, of financial assets held by households was in corporate and noncorporate business equity (Chart 4.3).

*Net Worth of U.S.
Business*

Total net worth, at book value, for nonfarm, non-financial businesses in the United States grew from \$1.53 trillion in 1979 to \$2.10 trillion in 1983.¹⁹ This amounted to an increase of \$142.5 billion a year during that four-year period.²⁰ The increase in net worth at book value comes mostly from two major sources: retained earnings and new equity capital, such as new stock issues and paid-in capital. Historically, retained earnings account for 40 to 60 percent of the total increase in equity capital for non-financial corporations.²¹ This implies that new

¹⁷Computed from Table A4.15.

¹⁸See Chapter 4, *The State of Small Business: A Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1983), pp. 106-107, hereafter, *The State of Small Business, 1983*.

¹⁹See Board of Governors of the Federal Reserve System, *Balance Sheet for the U.S. Economy, 1945-83* (Washington, D.C.: Board of Governors of the Federal Reserve System, April 1984).

²⁰Equity capital from internal sources grew at a slower rate during this period because of the recession's impact on business profits and retained earnings.

²¹Computed from Appendix Tables A3.16 and A3.17 of *The State of Small Business, 1984*.

equity capital from external sources averaged \$57 to \$86 billion for non-financial corporations and approximately \$16 to \$24 billion for nonfarm, non-financial, noncorporate businesses.

The equity market has become an increasingly important source of capital to small firms since 1980—especially between 1982 and 1984. External sources of equity capital come from private sources such as friends, relatives, and personal savings, and from the organized venture capital and public equity markets.²² The volume of equity financing varies widely in response to changes in business activities, corporate profits, and new business formation. The recovery in the stock market since August 1982 raised expectations about the funds the equity market might provide to new enterprises, especially in high technology. In fact, the boom in the public issue market helped raise interest in the venture capital market. Many venture capital investments in new firms were made with the intention of bringing the company to the public issue market.

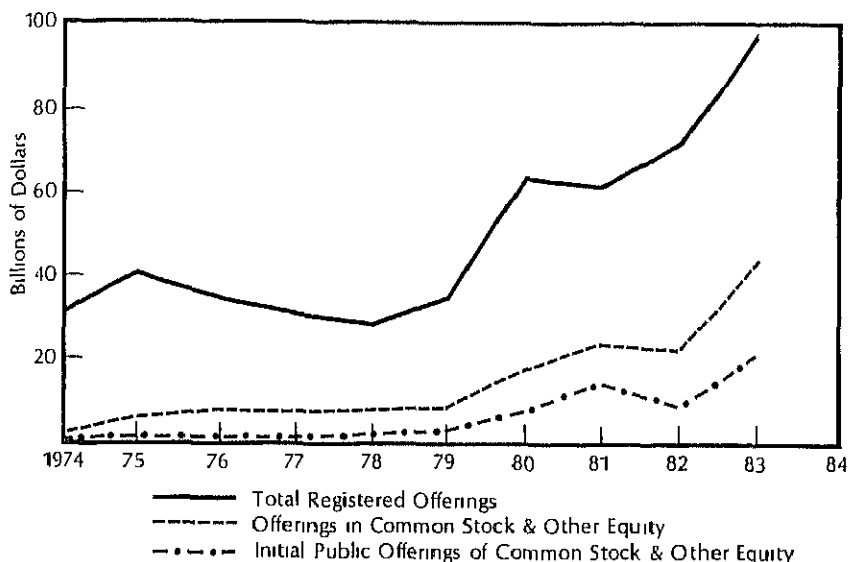
*Public Offering of
Corporate
Securities:
1979-1984*

The volume of public offerings, especially equity issues, has continued in an upward trend that started in 1979 (Chart 4.4). Total corporate securities offerings grew from \$34.9 billion in 1979 to \$97.3 billion in 1983, while offerings in common stock and in other equity instruments increased from \$8.5 billion to \$42.9 billion. Equity issues increased as a percentage of total offerings from under 25 percent during the 1974-1979 period to 44 percent in 1983 (Table A4.16).

Historically, small businesses have not participated heavily in the public equity market. However, there are indications that increased public acceptance of equity issues by small companies has encouraged more participation. Moreover, the Securities and Exchange Commission (SEC) has continued efforts to reduce transaction and reporting costs of small issue offerings by small corporations. Small corporations with growth potential have taken advantage of these changes in the public equity market. For example, small offerings issued by companies with a net worth under \$5 million increased from \$3.2 billion in 1982 to \$9 billion in 1983. Initial public offerings (IPOs) or unseasoned primary common stock registrations, as reported in the SEC's *Monthly Statistical*

²²See Chapter 4, *The State of Small Business, 1983*.

Chart 4.4 *Total Registered Offerings, Equity Offerings, and Initial Public Offerings by U S Corporations, 1974-1983*



Source: Compiled from U S Securities and Exchange Commission, *Small Business Capital Formation Trends, 1974-1983* (Washington, D C.: Securities and Exchange Commission, September 1984).

Review, also grew rapidly, from \$1.6 billion in 1982 to \$7.7 billion in 1983 (Table 4.5). Over 75 percent of the issuers of common stock/IPOS are firms with assets of under \$10 million (Chart 4.5 and Table A4.17).

Form S-18
Registration

Offerings under Form S-18 Registration—a simplified registration and reporting option made available by the SEC in 1979—have also become more popular, increasing from \$530 million in 1982 to \$1,350 million in 1983. Most of the Form S-18 registrants are small, high-tech startups, according to an earlier SEC study.²³ Since Sep-

²³See U S Securities and Exchange Commission, Directorate of Economic and Policy Analysis, *Form S-18. A Monitoring Report on the First 18 Months of Its Use* (Washington, D C.: Securities and Exchange Commission, March 1981). See also *State of Small Business, 1983*, p. 116.

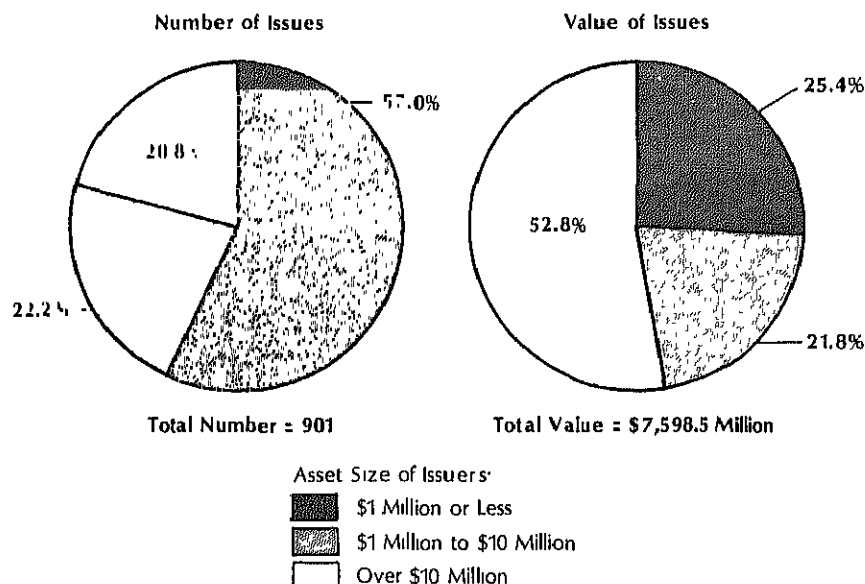
Table 4.5 *Corporate Securities Offerings and Small Business Issues, 1979-June 1984 (Billions of Dollars)*

	All 1933 Act Registrations			By Corporations with Net Worth of \$5 Million or less			Form S-18 Registrations	Unseasoned Primary Common Stock Registrations		
	Bonds, Debentures, and Notes		Conventional Common Stock	Amount	Number of Issues					
	Total									
1979	34.9	24.4	5.6	1.9	169		0.05	0.51		
1980	63.5	42.5	11.2	2.9	352		0.28	1.61		
1981	62.2	35.9	13.9	6.9	654		0.62	3.15		
1982	70.1	42.6	12.9	3.2	401		0.53	1.59		
1983	97.3	46.8	27.7	9.0	861		1.35	7.69		
January-June 1983	60.9			4.4	391		0.49			
January-June 1984	37.6			3.4	341		0.75			

Source: U.S. Securities and Exchange Commission

Source: U.S. Securities and Exchange Commission, *Monthly Statistical Review* (various issues), U.S. Securities and Exchange Commission, *Small Business Capital Formation Trends, 1974-1983* (Washington, D.C. Securities and Exchange Commission, September 1984), and U.S. Securities and Exchange Commission, *Directorate of Economic and Policy Analysis*, special tabulation for SBA Office of Advocacy

Chart 4.5 *Distribution of Common Stock Initial Public Offerings by Asset Size of Issuers, 1983*



Source: Compiled from U.S. Securities and Exchange Commission, *Small Business Capital Formation Trends, 1974-1983* (Washington, D.C.: U.S. Securities and Exchange Commission, September 1984).

tember 1982, the size limit of the Form S-18 registration has been increased to \$7.5 million, which should further encourage use of this filing procedure.

Regulation D: Private Exemptions from Registration

Regulation D attempts to offer a more coherent pattern of relief, particularly for small business. It gives issuers a choice of three exemptions from registration under Rules 504, 505, or 506. Under Rules 504 and 505, issues up to \$5 million do not require SEC registration, but may have to meet limited restrictions depending on the type of investors who purchase the offering. Moreover, if potential investors qualify as "accredited" investors, there are no specific disclosure or reporting requirements (Rule 506).²⁴ During the first year of operation, from April 1982 through April 1983, an estimated \$15.5 billion of securi-

²⁴ *The State of Small Business, 1983*, p. 117.

Table 4.6 *New Commitments, Disbursements, and Total Capital Pool of the Venture Capital Industry, 1977–1983 (Millions of Dollars)*

	New Commitments to Venture Capital Firms	Disbursements to Funded Companies	Total Investment Capital Pool At End of Year ¹
1977			2,521
1978	570	550	
1979	319	1,000	
1980	900	1,100	
1981	1,300	1,400	
1982	1,700	1,800	6,711
1983	4,100	2,800	12,076

¹Capital pool at year-end should equal total pool at the end of the previous year plus new commitments minus the amount of net withdrawal (or liquidation) from the funds. For 1983, an additional \$600 million was identified which had not been included in the prior estimate.

Source: Capital Publishing Corporation, *Venture Capital Journal* (various issues)

ties in 7,222 filings were claimed under Regulation D, according to an SEC study.²⁵ This volume amounted to 17 percent of the total dollar amount of registered offerings during this period. The Rule 506 exemption, which allows for the private placement of an unlimited amount for sales of securities to accredited investors and “qualified” non-accredited investors, accounted for 70 percent of the total offerings.

Small businesses made most of the Regulation D offerings, with an average issue size of \$2.5 million. Ninety percent of the issues were for \$5 million or less; however, there were several large issues by large corporations. Over 15 percent of the firms claiming Rule 506 exemption were large companies with total assets of at least \$25 million.²⁶

*Venture Capital
to Firms with
Rapid Growth
Potential*

The venture capital industry has continued the phenomenal growth that started in 1978. New capital committed to funds and disbursements to funded companies have almost doubled every year for the past five years (Table 4.6). For companies with rapid growth potential, venture capital investment provides seed capital during the early

²⁵Securities and Exchange Commission, Directorate of Economic and Policy Analysis, *Analysis of Regulation D*, (Washington, D.C.: Securities and Exchange Commission, May 1984); hereafter, *An Analysis of Reg. D*.

²⁶*Ibid.*, Table 7, p. 26.

stage of the company's formation and first- and second-round financing during the expansion period.²⁷

Unlike the public issue market, which has fluctuated widely in recent years, venture capital investment has grown steadily. However, the character of the market and the industry has changed drastically during the past three years. Formerly, venture capitalists consisted of a group of business development professionals interested in achieving high return on their investment through active involvement in the management of firms during early stages of their growth. Very few firms were selected, and these were nurtured over a span of five to ten years. Fluctuations in the economy, especially in the public investment markets, had relatively little impact on the industry.

There have been many changes in the venture capital market since 1980, when Apple Computer, Inc., an earlier product of venture capital investment, was brought to the public issue market. Since then, venture capital investment has become more directly linked to the new issue market.²⁸ By bringing a company public, many venture capital investors have reaped investment gains in a shorter period. With the recovery of the securities and initial public offering markets since mid-1982, the volume of venture capital investment has surged. In 1983, some \$4 billion was committed to venture capital; the industry in turn invested \$2.8 billion in about 1,000 companies (Table 4.6).

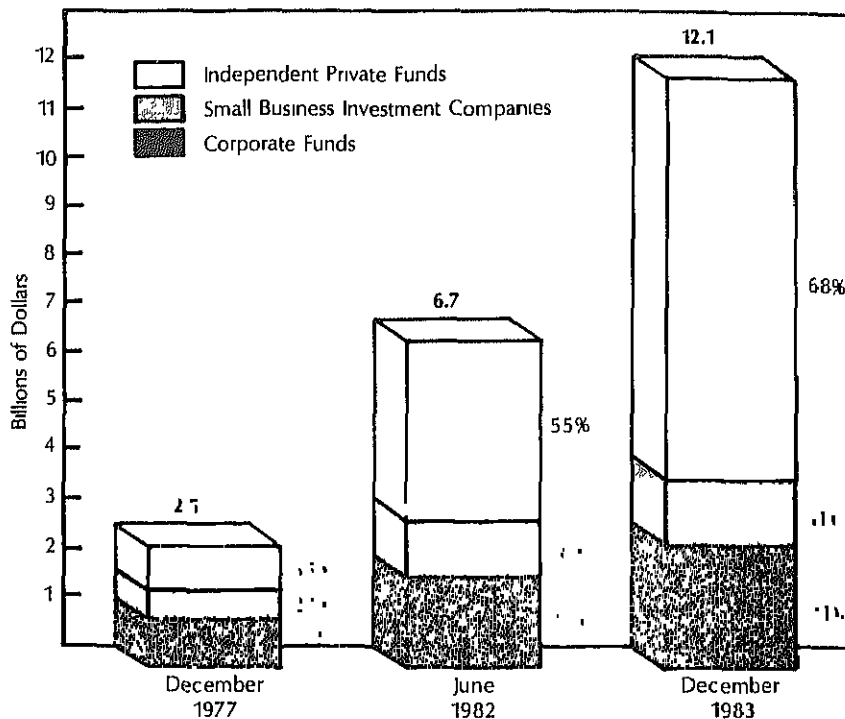
Average investment per recipient firm for early stage financing has also increased substantially, from \$1.6 million per company in 1982 to \$2.3 million in 1983. However, many of these deals are syndicated, allowing individual venture capital funds to limit their commitment. For example, during 1983, the average size deal for early stage financing was \$2.3 million, while average investment of a fund in a deal was approximately \$500,000 to \$800,000.²⁹

In 1983, there were some 450 venture capital funds including 233 independent private funds, 78 corporate funds, and 137 venture-related Small Business Investment Companies (SBICs). Independent private funds,

²⁷ See also *The State of Small Business, 1983*, pp. 109–110.

²⁸ Joel Kotkin, "Why Small Companies are Saying No to Venture Capital," *Inc. Magazine* (August 1984), p. 72.

²⁹ "Venture Capitalists Invest \$2.8 billion in 1983," *Venture Capital Journal*, May 1984, pp. 7 and 10. Average investment of a fund in deal was computed from investment data for the thirty most active venture capital firms.



Source: *Venture Capital Journal*, Capital Publishing Corporation (various issues)

contrast to venture-capital-related SBICs and corporate funds (affiliated with financial and industrial concerns), showed the greatest increase. Of a \$5.3-billion increase in the capital pool between June 1982 and December 1983, independent private funds accounted for \$4.4 billion. Major investors in these independent funds included pension funds, individuals, foreigners, and insurance companies.³⁰

Slower price increases in the stock market have put a halt to the rapid growth in venture capital financing in 1984. Several securities brokerage firms have decided to cancel or delay the issue of public venture capital funds,

³⁰As of 1983, the share of total capital invested by the three groups is 68 percent for independent funds, 21 percent for corporate subsidiaries and non-SBIC public funds, and 11 percent for SBICs. "Special Report Venture Capital Industry Resources," *Venture Capital Journal* (July 19, 1983), p. 4.

which were so successful during the bull market of 1982–1983.¹¹ According to projections by Venture Economics Inc., a Wellesley, Massachusetts research firm that follows such financings, new commitment to venture capital funds probably will not exceed the 1983 level, making 1984 the first year of no increase since 1979.¹²

*Small Business
Investment
Companies
(SBICs)*

Disbursements to small business by SBICs—privately owned companies licensed and funded through the SBA to provide equity capital to small firms—increased 27 percent to \$469 million in 1983. During the first half of 1984, SBICs maintained the high 1983 volume, despite a sluggish equity market and continued uncertainty about government funding (Table A4.18).

*Small Business
Innovation
Research (SBIR)
Program*

Since the enactment of the Small Business Innovation Development Act in July 1982, more research contracts have been awarded by the Federal Government to small business research and development (R&D) firms. In 1983, over \$100 million in contracts was awarded to small businesses through the SBA's SBIR program, compared to \$45 million in 1982. Retained earnings from these R&D contracts are an important source of equity capital in the start-up years of small R&D firms.¹³

In sum, young and fast-growth companies have received an increasing supply of equity capital from the public equity market and the venture capital industry during the past three years. Increased public interest in the equity market and efforts by the SEC to reduce transaction and reporting costs to small issuers are some of the factors contributing to this growth.

**Federal and State
Financing of
Small Business**

Federal financing assistance to small businesses is provided directly through credit programs such as loans at subsidized rates and loan guarantees, and indirectly in

¹¹"Venture Capital Firms Are Hit by Slower Growth in Financing," *Wall Street Journal*, August 17, 1984, p. 17.

¹²The performance of public venture capital funds, which was authorized under the SBIC Act of 1980, is yet to be assessed.

¹³Arthur S. and Judith H. Obermayer, "Case Studies Examining the Role of Government R&D Contract Funding in the Early History of High Technology Companies" (Washington, D.C.: Office of Advocacy, U.S. Small Business Administration, 1980). NTIS Accession Number PB81-108425.

Table 4.7 Techniques and Tools of State Economic Development

Direct Financial Incentives

State-Issued Industrial Revenue Bonds
Locally Issued Industrial Revenue Bonds
State-Issued General Obligation Bonds
Locally Issued General Obligation Bonds
Umbrella Bonds
Industrial Revenue Bond Guarantees
Direct State Loans
Loan Guarantees
State-Funded Interest Subsidies
State-Funded or State-Chartered Equity/Venture Capital Corporations
Privately Sponsored Development Credit Corporations
Other Financing Programs
Enterprise Zones
Customized Industrial Training

Tax Exemptions, Deductions, Credits and Special Treatment

Job Creation Tax Credit
Investment Tax Credit
Property Tax Abatement
Business Inventory
Goods in Transit
Research and Development
Pollution Control Equipment
Industrial Machinery and Equipment
Industrial Fuels and Raw Materials
Energy and Fuel Conservation Measures
Other

Non-Financial Assistance

Business Consulting
 Management Training
 Market Studies
 Site Selection
Licensing, Regulation, and Issuing of Permits
Job Training
Research and Development
Business Procurement Assistance
Specialty Services

Improvement of the Business Environment

Physical Environment
 Public Infrastructure Development
 Land Banking
 Buildings
Business Councils and Economic Development Corporations

Source: Compiled from Urban Institute, et. al., *Directory of Incentives for Business Investment and Development in the U.S.* (Washington, D.C.: Urban Institute Press, 1983), Tables 1 and 4

the form of tax expenditures—special provisions in the tax laws allowing businesses to defer or reduce their tax liabilities and enhance their cash flows (Tables A4.19 and A4.20)

Recently, the Federal Government has placed greater emphasis on indirect financing through tax measures by the passage of the tax acts of 1981 and 1982, which have contributed to a substantial increase in the amount of tax expenditures. At the same time that the Federal Government is reducing direct business financing, state governments are providing more direct and indirect assistance to business startups and young growth firms, especially in high technology. Financial assistance includes direct loans, loan guarantees, grants, lower tax rates, tax credits, and accelerated depreciation or expensing.¹⁴

During 1981, the 50 states administered 192 direct business financing programs, not including tax incentives. A large percentage of state industrial financing is provided through tax-exempt industrial revenue bonds (IRBs). More than \$19.3 billion, or 97 percent of the total financing, was provided by the states through industrial revenue bonds in 1981.¹⁵ By 1983, total industrial revenue bonds used by states for business promotion increased to \$22.8 billion, according to a study by the Congressional Budget Office (CBO) (Table A4.21).¹⁶

The CBO study also found that "most of the business incentive programs recently initiated by the states are directed toward small business" and that "state governments have become especially active in promoting both international trade and foreign investment." It further noted that "the states are beginning to finance R&D projects aimed at business development;" and indicated that the Job Training Partnership Act (JTPA) is the primary vehicle for both federal and state job training and labor adjustment assistance. Other state assistance to new and

¹⁴See Table 4.7 for a list of financial and nonfinancial assistance.

¹⁵National Association of State Development Agencies, *The NASDA Letter*, September 1983 (Washington, D.C.: NASDA, September 8, 1983). IRB financing involves initiatives taken by state and local governments in issuing tax-exempt securities. Low-interest cost is made possible by federal income tax exemptions for interest income earned by investors. Government subsidies under this program are from the Federal rather than state or local governments.

¹⁶U.S., Congress, Congressional Budget Office, *Federal Role in State Industrial Development Programs* (Washington, D.C.: U.S. Government Printing Office, July 1984).

young firms has been developed in the form of participation and secondary market activity.³⁷

**Small Business
Financing in a
Changing
Financial
Environment**

Small businesses are concerned about development in the financial services industry because they depend on these institutions to meet their external financing needs. Dramatic changes have occurred in the industry since the enactment of the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA) and the Depository Institutions Act of 1982 (Garn-St Germain Act). Increasing entry into financial services by giant industrial and retail corporations, geographic and product expansion by major financial service firms, and the elimination of interest rate ceilings on deposits at depository institutions have all affected competition and business participation in the financial services industry.

While Congress considers the impact of recent developments on the structure of the U.S. financial industry, technological and financial innovations are continuing to erode previously imposed restrictions on the expansion of financial products. Many commercial banks already set up "nonbank banks," acquired out-of-state savings and loan associations, leased space to insurance companies, and established discount and full-service security brokerage services. Moreover, a regional banking initiative in the New England states has started a trend toward interstate banking in many other regions, including the Midwest and the Southeastern states of North Carolina, Florida, and Georgia.

Recent developments in the financial industry, therefore, offer both opportunities and risks to small business owners. How will they fare in this new environment? Will they have better or poorer access to capital at a better or less advantageous price? Can smaller banks survive in this environment of change and expansion?

*Small Banks: The
New Deregulated
Environment*

The survivability of small depository institutions in the wake of deregulation raises serious questions about whether they will continue in their traditional role in the economy. The mass entry of giant corporations like Se

³⁷See U.S. Small Business Administration, Office of Advocacy, *Small Business Activities in Venture Capital, Early-Stage Financing, and Secondary Markets* (Washington, D.C.; May 1984).

³⁸See, however, "The Peril in Financial Services," *Business Week*, August 20, 1984, pp. 52-57.

and K-Mart into the financial services industry only intensifies the concern. Many small banks serving small businesses and local communities fear they will be forced to close or merge as large institutions enter the local market and offer a broader range of products and services. However, the dynamics of American industries and the diversified preferences of American workers and business persons should provide an environment in which many efficient and innovative financial institutions will prosper.

Depository institutions have experienced structural changes during the past ten years. While the number of banks changed little during this period, many new branches were being opened until 1982, when major banks began to restructure operations by consolidating branches and replacing them with Automatic Teller Machines (ATMs) (Table A4.22). Bank holding companies became the most important form of organization, accounting for 73 percent of total branches and 86 percent of total assets in the United States in 1983 (Chart 4.7).

While financial difficulties have led to an increase in the number of banks ceasing operations through absorption, consolidation, and merger in the past three years, more new banks are still being opened. During 1983, 405 new banks were established, compared to 373 in 1982.³⁹ New banks are betting that the larger banks created by mergers will ignore small business customers and create a void that these banks can fill.⁴⁰

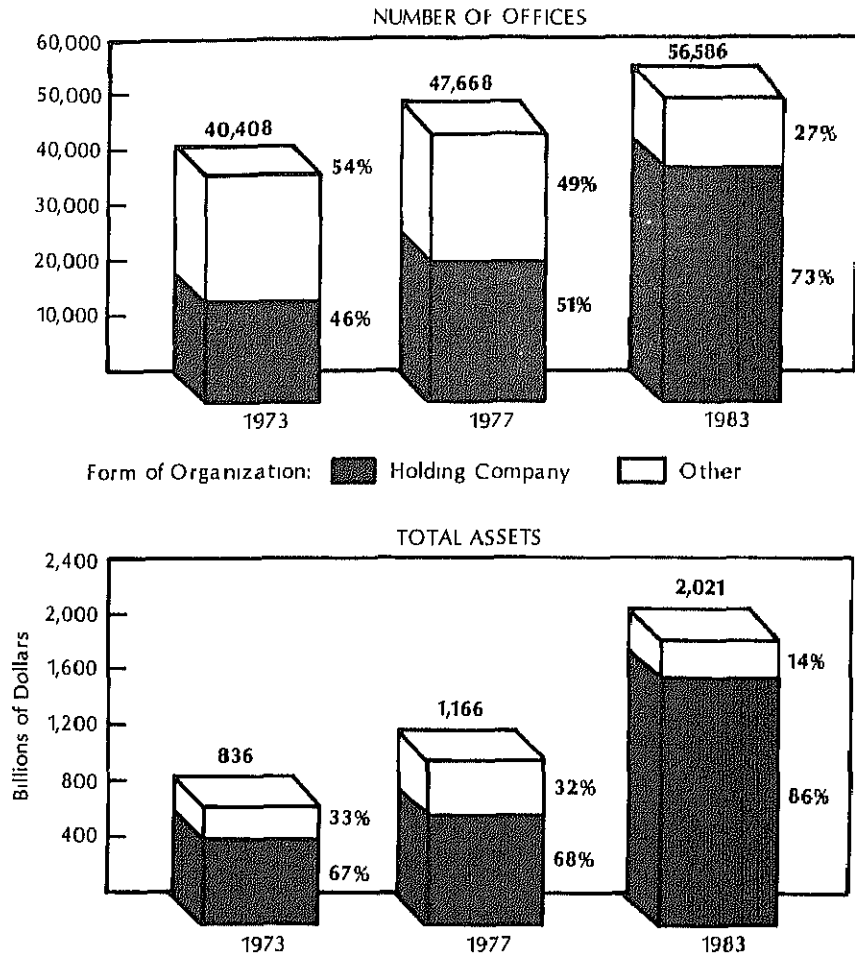
The number of S&Ls declined substantially in 1982 and 1983 because of the difficulties they experienced in a period of rising inflation and high interest rates (Table A4.23). Many S&Ls are burdened by portfolios full of low-interest, fixed-rate mortgages. Both large and small S&Ls continue to have low net worth and are subject to great pressure whenever interest rates move up.

In short, volatility and uncertainty will continue to characterize the banking industry in the 1980s. The consolidation in the industry, characterized by a large decline in the thrifts, is the result of a decade of rising inflation and interest rates. However, there is no indication that increased competition resulting from deregulation and technological innovation has caused mass

³⁹The number of new banks established from 1978 through 1981 is 178 banks in 1978, 233 in 1979, 241 in 1980, 250 in 1981. Federal Deposit Insurance Corporation, *Changes Among Operating Banks and Branches* (Washington, D.C.: FDIC), various issues.

⁴⁰*Wall Street Journal*, March 27, 1984.

Chart 4.7 *Number of Banking Offices and Total Assets by Type of Organization, 1973, 1977, and 1983*



Note: Banking offices include main offices and branches of banks.

Source: Board of Governors of the Federal Reserve System, *Annual Statistical Digest* (Washington, D.C.: Board of Governors of the Federal Reserve System, various issues).

failures or liquidations of smaller institutions in the banking industry.

The broader authority to offer different types of deposits at unregulated rates allows all depository institutions to compete equally for savings deposits. Small institutions have benefited from this deregulation. A recent

study by the Federal Reserve Bank of Cleveland found that from December 1982 through March 1984, larger banks lost market shares in deposits to thrifts and other banks in Money Market Deposit Accounts (MMDA) and in large Certificates of Deposit (CDs) ⁴¹

The cost advantage of large banking institutions in collecting deposits, extending loans, and providing other financial services in a completely deregulated environment may be overstated ⁴² Developments in the wholesale financial services and availability of networking facilities (e.g., shared ATMs) to smaller financial institutions have enhanced the ability of many small institutions to compete in the market

As long as the American public demands varying degrees of quality and convenience, the financial service industry will maintain a high level of product diversity, where products and services offered by one firm are slightly different from those offered by other firms.⁴³ It is reasonable to expect the coexistence of giant financial corporations offering "supermarket" financial service centers and many small financial companies offering special services to fill the niches in the market.

In summary, a more competitive financial service industry does not necessarily mean the demise of small financial service firms. Most small firms have proven to be cost effective and innovative and have taken advantage of deregulation in the banking industry since 1980.

⁴¹Paul R. Watro, "Rate Deregulation and Deposit Shifting," *Economic Commentary* (Cleveland, Ohio: Federal Reserve Bank of Cleveland, July 16, 1984)

⁴²Past studies on the economies of scale in the banking industry concluded that economies of scale disappeared as soon as the bank size approached around \$100 million in assets. To what extent recent developments in information and telecommunications have altered this conclusion is yet to be assessed. See Federal Reserve Bank of Chicago, *Banking Structure and Competition, Proceedings of a Conference* (Chicago, Illinois: Federal Reserve Bank of Chicago, May 1983), Section V, and U.S., Congress, Office of Technology Assessment, *Effects of Information Technology on Financial Services Systems* (Washington, D.C.: U.S. Government Printing Office, September, 1984)

⁴³See Peter Merrill Associates, "Strategic Implication of Consumer Demand," *American Banker*, December 29, 1982. A survey by the company revealed that the upper income groups are the least interested in such bundling (of all types of services offered by one institution) and "prefer many accounts and other financial service relationships."

The process of deregulation, however, needs careful monitoring. The extent to which remaining regulations discriminate against small institutions should be closely scrutinized.⁴⁴

In a deregulated environment, local community banks may have to offer interest rates comparable to the prevailing rates in order to retain deposits. Small businesses may no longer be able to borrow money from local community banks at rates below those charged by money center banks. Moreover, loanable funds are less likely to remain within the local community. There is no present indication, however, that money-center banks will capture local markets and shift significant amounts of deposit funds from the community for investment elsewhere.

Deregulation, as well as technological and financial innovations in the financial services industry, have increased competition for both deposits and loans. Small business owners should benefit from expanding investment and loan alternatives.

Deregulation has enabled depository institutions to remain competitive in the markets for savings funds. The introduction of MMDAs and Super-NOW accounts has allowed these institutions to regain deposit flows lost to other financial intermediaries before deregulation.

Bank deposits have grown at a faster rate than total financial assets during the past three years. Because small businesses obtain most of their external financing from depository institutions rather than from organized credit markets, increased availability of credit from these institutions should benefit small businesses, as well as other borrowers.⁴⁵

While consumer knowledge of deposit alternatives is growing rapidly, borrowers are also expanding their horizons in seeking financing sources.⁴⁶ A recent study

⁴⁴For example, the use of a uniform fiat-rate premium for deposit insurance, the capital requirement ratio, policy regarding the merger of a problem institution with an existing institution, and the requirement related to electronic funds transfer (Regulation E) might affect small institutions differently than larger institutions.

⁴⁵Competition for the upscale small business market (i.e., for small businesses with assets or sales of \$1 million and over) has intensified during recent years. See David N. Low, Jr., "Coming Trend: Going Where Competition Isn't," *American Banker*, December 3, 1983, and "It Is a Heated Battle for the Middle Market," *American Banker*, August 23, 1984.

⁴⁶Peter Merrill Associates, "Strategic Implication of Consumer Demand," *American Banker*, December, 1982, p. 6.

finds that small businesses are turning more to out-of-state credit sources for alternative financing.⁴⁷

To the extent that a local community bank has historically collected local deposits at "regulated" rates for lending to local businesses at below-money-center rates, deregulation will result in increased borrowing costs for some small firms. In any case, these low-cost deposits are becoming less available as depositor sophistication increases. Further, the average cost of funds for banks and thrifts has increased substantially. However, marginal costs of funds—the costs of obtaining additional funds for lending—will not necessarily be higher after deregulation.

Conclusion

During the rapid recovery of 1983–1984, financing was amply available to most small businesses. Borrowing grew slowly during the first three quarters of 1983 when profit increases covered much of the demand for additional cash. As the recovery accelerated, small business borrowing increased significantly, accompanied by increased borrowing by large businesses.

Equity financing for young and fast-growth firms has experienced dramatic increases during the past several years, stimulated by interest in equity investment by the American public. Favorable tax laws further fueled the expanding equity market. The growth, however, has slowed slightly. As new firms continue to enter new industries, such as electronic, biomedical, and information and service industries, equity financing for small firms is likely to gain in importance.

Financial deregulation will undoubtedly affect small institutions; however, well-managed, small financing institutions should remain competitive in a deregulated environment. Most small businesses will benefit from the increased competition as more financial institutions offer more products and services.

⁴⁷Larry Frieder, "The Southern Financial Marketplace: The Florida Interstate Banking Study," Paper presented at Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, Chicago, Illinois, April 24, 1984.

Table A4.8 *Net Increase in Credit Market Debt by Non-Financial Business in the U.S., 1979-1984¹ (Billions of Dollars)*

	Total	Bonds	Mortgages	Bank Loans n.e.c. ³	Other Loans Total	F.C. ²
1979	152	27	41	49	34	10
1980	126	38	35	33	21	3
1981	160	35	34	50	40	9
1982	117	34	32	52	-1	-1
1983	128	25	62	23	18	14
1983 III	130	17	70	16	27	14
1983 IV	200	16	75	64	45	26
1984 I	222	37	56	91	37	28
1984 II	241	28	80	75	59	12

¹Quarterly figures are annualized. Detail may not add to total because of rounding.

²Loans from finance companies to non-financial corporate business.

³n.e.c. = not elsewhere classified.

Source: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts, Second Quarter 1984, Annual Revisions* (Washington, D.C.: Board of Governors of the Federal Reserve System, September 1984), p. 9.

Table A.4.9 Short-Term Bank Loans by Loan Size, August 1979–May 1984 (Millions of Dollars)

	Small Loans				Large Loans				Total Amount
	Under \$50,000		\$50,000 to \$500,000		Over \$500,000		Percent		
	Amount	Percent	Amount	Percent	Amount	Percent			
August 1979	1,403	16.9	1,864	22.5	5,028	60.6		8,295	
November 1979	1,066	13.1	2,156	26.6	4,885	60.3		8,107	
February 1980	1,254	12.6	2,236	22.5	6,430	64.9		9,920	
May 1980	1,404	12.4	2,756	24.4	7,057	62.3		11,317	
August 1980	1,195	8.9	2,782	20.6	9,498	70.5		13,475	
November 1980	1,278	9.8	2,382	18.2	9,440	72.1		13,101	
February 1981	1,339	7.9	3,419	20.1	12,227	72.0		16,986	
May 1981	1,335	8.0	2,886	17.2	12,619	74.9		16,841	
August 1981	1,468	5.8	3,428	13.9	20,343	82.7		24,597	
November 1981	1,493	5.9							
February 1982	1,440	4.6	3,079	9.7	21,236	83.4		25,467	
May 1982	1,387	3.8	3,057	8.3	27,082	85.7		31,601	
August 1982	1,602	4.3	2,800	7.5	32,157	87.9		36,600	
November 1982	1,647	4.4	2,691	7.1	33,160	88.3		37,562	
February 1983	1,574	3.8	2,496	6.1	33,492	88.5		37,831	
May 1983	1,886	5.0	3,298	8.7	37,101	90.1		41,172	
August 1983	1,618	4.4	3,233	8.8	32,863	86.4		38,048	
November 1983	1,140	4.2	2,597	9.7	31,969	86.8		36,820	
February 1984	1,541	4.0	2,956	7.7	23,170	86.1		26,906	
May 1984	1,859	4.8	3,592	9.3	33,833	88.3		38,330	
					33,284	85.9		38,734	

Note: Detail may not add to total due to rounding.

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Bank Lending" (Statistical Release E-2, various issues).

Table A4.10 Long-Term Bank Loans by Loan Size, August 1979–May 1984 (Millions of Dollars)

	Small Loans				Large Loans				Total Amount
	Under \$100,000		\$100,000 to \$500,000		Over \$500,000				
	Amount	Percent	Amount	Percent	Amount	Percent			
August 1979	359	19.0	169	8.9	1,361	72.0	1,889		
November 1979	326	19.8	204	12.4	1,116	67.9	1,644		
February 1980	287	15.2	254	13.5	1,345	71.3	1,886		
May 1980	171	12.8	181	13.5	988	73.7	1,340		
August 1980	324	18.0	218	12.1	1,260	69.9	1,803		
November 1980	306	9.7	572	18.1	2,274	72.1	3,152		
February 1981	239	11.3	297	14.1	1,571	74.6	2,107		
May 1981	281	7.7	451	12.4	2,903	79.9	3,634		
August 1981	344	8.8	314	8.1	3,231	83.1	3,889		
November 1981	317	13.0	689	28.3	1,432	58.7	2,438		
February 1982	320	9.0	330	9.3	2,891	81.6	3,542		
May 1982	254	6.9	411	11.9	3,041	82.1	3,705		
August 1982	273	7.0	350	9.0	3,286	84.1	3,908		
November 1982	380	9.5	460	11.5	3,168	79.0	4,008		
February 1983	463	13.2	451	12.8	2,598	74.0	3,512		
May 1983	776	18.5	420	10.0	3,008	71.5	4,205		
August 1983	532	11.8	387	8.6	3,572	79.5	4,491		
November 1983	367	12.9	426	15.0	2,042	72.0	2,834		
February 1984	473	12.8	352	9.5	2,881	77.7	3,706		
May 1984	684	16.6	349	8.5	3,097	75.0	4,130		

Note: Detail may not add to total due to rounding

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Bank Lending" (Statistical Release L-2, various issues)

Table A4.11 Interest Rates for Short Term Commercial and Industrial Loans by Large and Other Banks, February 1981–May 1984

	Size of Loan (Thousands of Dollars)						
	All Sizes	1—24	25—49	50—99	100—499	500—999	1,000 and Over
48 Large Banks							
1981—February	19.9	21.9	21.7	21.6	21.5	20.8	19.8
—May	20.3	20.6	20.7	20.5	20.4	20.2	20.3
—August	21.1	22.7	22.9	22.5	22.3	21.7	21.0
—November	16.7	20.2	19.8	19.6	19.1	18.5	16.6
1982—February	17.0	18.4	18.1	17.9	17.6	17.4	17.0
—May	17.0	18.9	18.6	18.3	17.9	17.7	16.9
—August	12.7	17.9	17.4	17.2	16.6	15.7	12.5
—November	10.8	14.8	14.3	13.9	13.2	12.9	10.7
1983—February	9.9	13.5	13.0	12.8	12.3	11.7	9.8
—May	9.9	12.8	12.3	12.2	11.8	11.1	9.9
—August	10.9	12.9	12.4	12.2	11.8	11.5	10.3
—November	10.6	13.4	12.9	12.8	12.4	11.8	10.5
1984—February	10.8	13.2	13.0	12.6	12.4	12.0	11.7
—May	12.2	14.5	14.2	14.1	13.7	13.2	12.1

Table A4.11 Interest Rates for Short Term Commercial and Industrial Loans by Large and Other Banks, February 1981–May 1984—Continued

	All Sizes	Size of Loan (Thousands of Dollars)						1,000 and Over
		1-24	25-49	50-99	100-499	500-999		
Other Banks								
1981—February	19.9	19.4	19.2	19.5	19.9	20.9	20.3	
—May	19.5	19.3	19.7	19.7	18.8	19.3	19.5	
—August	21.1	20.6	21.1	21.1	21.1	22.0	21.2	
—November	18.7	19.9	19.1	19.1	19.7	18.8	17.9	
1982—February	17.4	18.3	17.8	18.2	17.7	17.3	16.8	
—May	17.6	18.5	18.6	18.0	17.7	18.1	17.0	
—August	15.6	17.9	17.2	16.9	16.9	16.1	13.8	
—November	13.0	15.7	15.4	14.0	14.0	13.0	11.3	
1983—February	11.8	14.5	13.7	13.5	12.9	11.5	10.2	
—May	11.4	13.9	13.8	12.7	11.9	11.5	10.1	
—August	11.8	14.1	13.7	12.8	11.9	12.0	10.8	
—November	11.8	14.0	13.9	13.3	12.3	11.9	10.8	
1984—February	12.0	14.2	13.5	13.5	12.8	12.6	11.4	
—May	13.2	15.0	14.5	14.5	13.9	13.5	12.3	

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Lending to Business Firms."

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Bank Lending" (Statistical Release E.2, Various Issues).

Table A4.12 *Interest Rates for Long-Term Commercial and Industrial Loans by Large and Other Banks, February 1981–May 1984*

	Size of Loan (Thousands of Dollars)				
	All Sizes	1–99	100–499	500–999	1,000 and Over
40 Large Banks					
1981—February	19.4	20.7	20.4	20.8	19.1
—May	19.2	19.9	19.5	19.3	19.2
—August					
—November	17.7	19.4	18.7	18.4	17.3
1982—February	16.1	18.3	17.2	17.0	16.0
—May	16.7	18.6	17.6	17.1	16.6
—August	14.2	18.1	16.8	16.0	13.9
—November	11.7	14.2	13.6	12.9	11.5
1983—February	10.9	13.5	12.5	12.0	10.7
—May	10.4	13.2	12.0	12.1	10.2
—August	11.4	13.1	12.0	11.6	11.4
—November	11.6	12.9	12.4	12.2	11.3
1984—February	11.6	13.3	12.3	11.9	11.5
—May	12.6	14.3	13.7	13.5	12.4
Other Banks					
1981—February	19.1	18.8	18.7	20.0	19.2
—May	19.5	19.1	19.3	19.7	19.7
—August	20.2	19.6	20.3	21.3	20.2
—November	20.2	19.7	21.7	18.6	18.0
1982—February	17.6	19.2	17.8	16.9	16.8
—May	17.6	18.8	17.6	17.5	17.0
—August	17.4	19.0	16.7	16.5	17.2
—November	13.4	15.4	14.1	13.2	11.2
1983—February	13.6	14.7	14.3	13.0	11.9
—May	13.1	14.6	13.2	11.7	10.9
—August	12.7	14.7	12.1	11.7	11.4
—November	N/A ¹	14.4	N/A ¹	11.8	12.2
1984—February	12.5	14.3	12.0	12.4	11.4
—May	14.0	15.0	14.0	13.6	13.0

¹ The weighted average rate of size groups 100–499 was reported as 20.5, which is not used because it is extremely high relative to rates for other size groups.

Source: Board of Governors of the Federal Reserve System, "Survey of Terms of Bank Lending" (Statistical Release E-2, various issues).

1981-3	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1981-4	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1982-1	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1982-2	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1982-3	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1982-4	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1983-1	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1983-2	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1983-3	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1
1983-4	22.5	-1.05	0.015	756	-1.012	1.452	-1.22	3.425	1

Note: 'Amount' is for loan size; 'Mat-Days' for time to maturity in days; 'commit' for loan commitment; 'Demand' is for loans 20 days or less; 'Collat' for loans with floating rates; 'Collat' for collateralized loans; 'Assets' for asset size of the banks; and 'Part' for participation loans. For currency, variables such as Commit, Demand, Floating Collat, and Part, a value of "1" is assigned if yes, and a "0" value for no. Units of loan size are in thousands of dollars and of bank asset size in \$10 billions.

NS = coefficients that are found statistically not significant at 5 percent

Source: Charles Ou "Loan Rates Charged by Commercial Banks—A Statistical Investigation of Micro-loan Data," unpublished manuscript Table 1

Table A4.14 *Business Receivables Outstanding for Finance Companies in the U.S. May 1979–1984 (Billions of Dollars)*

At the End of	Total Receivables Outstanding		Receivables in Retail Paper in Business, Industrial, and Farm Equipment	
	Amount	Percent Growth	Amount	Percent Growth
1979	70.3		18.9	
1980	72.3	2.8	23.5	24.3
1981	81.0	12.0	28.0	19.1
1982	81.0	0	28.2	0.7
1983	95.2	17.5	28.8	2.1
1984 May ¹	102.9	19.4	29.4	5.0

¹Percent growth at annual rate

Source: Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*, various issues.

Table A4.15 *Total Financial Assets, Corporate Equity, and Equity in Noncorporate Business Held by Households in the U.S., 1965–1983 (Billions of Dollars)*

	Total Financial Assets	Corporate Equity	Equity in Noncorporate Business
1965	1,925	636	459
1966	1,941	576	481
1967	2,182	720	497
1968	2,433	858	522
1969	2,406	746	546
1970	2,490	729	564
1971	2,742	833	590
1972	3,033	913	644
1973	3,062	713	760
1974	3,058	506	852
1975	3,500	660	936
1976	3,954	772	1,048
1977	4,274	733	1,193
1978	4,816	750	1,441
1979	5,541	915	1,680
1980	6,457	1,222	1,916
1981	6,925	1,163	2,086
1982	7,529	1,322	2,145
1983	8,277	1,520	2,234

Source: Board of Governors of the Federal Reserve System, *Balance Sheets for the U.S. Economy, 1945–83* (Washington, D.C.: Board of Governors of the Federal Reserve System, April 1984).

Table A4.16 *Total Corporate Securities Offerings and Initial Public Offerings, 1974-1983 (Billions of Dollars)*

	Total Offerings				Initial Public Offerings			
	Total	Common Stock	Other Equity	All Other ¹	Total	Common Stock	Other Equity	All Other ¹
1974	31.6	2.7	1.2	27.7	2.0	0.1	1.2	0.7
1975	40.2	5.6	1.0	33.6	1.3	0.1	0.9	0.3
1976	34.9	6.9	0.9	27.1	1.3	0.2	0.8	0.3
1977	31.7	5.9	1.5	24.3	2.2	0.1	1.3	0.8
1978	28.4	5.2	2.5	20.7	3.1	0.3	2.4	0.4
1979	34.9	5.6	2.9	26.4	3.6	0.5	2.7	0.4
1980	63.5	11.2	6.6	45.7	8.6	0.2	6.2	1.2
1981	62.3	13.9	10.9	37.5	14.7	3.0	10.2	1.5
1982	70.1	12.9	9.8	47.4	10.7	1.5	7.7	1.5
1983	97.3	27.7	15.2	54.4	25.3	7.6	14.3	3.4

¹All others include registered offerings in preferred stock, bonds, debentures and notes

Source. Compiled from U.S. Securities and Exchange Commission, *Small Business Capital Formation Trends 1974-1983* (Washington, D.C.: U.S. Securities and Exchange Commission, September 1984), Table 2.

Table A4.17 *Asset Size of Common Stock Initial Public Offering Issuers, 1974-1983 (Millions of Dollars)*

Year	Asset Size of Issuers											
	\$500,000 or Less		\$500,001 to \$1,000,000		\$1,000,001 to \$5,000,000		\$5,000,001 to \$10,000,000		\$10,000,001 to \$50,000,000		\$50,000,001 or More	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
1974	22	89.4	0	0	10	19.0	1	2.0	13	26.2	46	136.6
1975	14	23.8	0	0	2	1.8	1	0.8	6	46.3	23	73.5
1976	12	38.8	0	0	4	5.7	7	22.3	19	96.4	42	163.2
1977	30	53.4	4	5.0	7	16.5	7	26.0	7	17.3	55	118.2
1978	38	100.0	2	2.1	4	5.5	7	22.4	17	133.7	68	263.7
1979	54	182.0	15	43.8	11	50.2	9	53.6	20	175.0	109	504.6
1980	149	424.2	24	71.9	37	150.1	20	95.1	43	507.5	273	1,248.8
1981	269	1,112.3	34	123.8	120	484.6	43	330.8	78	925.9	544	2,977.4
1982	189	676.4	30	81.0	40	130.1	22	171.2	34	459.4	315	1,518.1
1983	462	1,704.6	51	228.0	124	775.4	77	880.9	187	4,009.6	901	7,598.5

Source: U. S. Securities and Exchange Commission, *Small Business Capital Formation Trends, 1974 to 1983* (Washington, D. C.: U. S. Securities and Exchange Commission).

Table A4.18 *Number of Financings and Amount of Disbursements to Small Business by Small Business Investment Companies, 1973-1984 (Millions of Dollars)*

	SBICs		301(d) ¹		Total	
	Number	Amount	Number	Amount	Number	Amount
1973	1,815	185.9	286	7.4	2,101	193.3
1974	1,541	126.8	367	12.4	1,908	139.2
1975	1,655	122.7	323	13.0	1,978	135.7
1976	1,720	129.4	344	13.6	2,064	143.0
1977	2,071	206.3	439	22.6	2,510	228.9
1978	2,087	232.6	463	32.0	2,550	264.6
1979	2,257	280.1	441	35.1	2,698	315.2
1980	2,090	295.2	547	42.2	2,637	337.4
1981	2,434	332.7	742	54.4	3,176	387.1
1982	2,177	322.9	764	47.0	2,941	369.9
1983	2,464	412.9	783	55.9	3,247	468.8
January-June 1983	1,294	211.4	408	27.2	1,702	238.6
1984	1,318	203.4	565	40.5	1,883	243.9

¹301(d) companies are minority or economically disadvantaged SBICs.

Source: U.S. Small Business Administration, Investment Division

Table A4.19 *Industrial Support Credit Programs for 1984 (Billions of Dollars)*

Program	Direct Loan Obligations	Primary Loan Guarantee Commitments	Net Program Outlays
Total	20.9	17.7	8.8
Rural Electrification Administration	4.5	0.0	4.0
Commodity Credit Corporation	7.4	3.0	2.1
Agricultural Credit Insurance Fund	4.6	1.3	0.8
Export-Import Bank	2.5	9.0	0.9
Small Business Administration			
Business Loan and Insurance Fund	1.5	2.9	0.6
Other	0.4	1.5	0.4

Source: Congress of the United States, Congressional Budget Office, *Federal Support of U.S. Business* (Washington, D.C.: Government Printing Office, January 1984), p. 30.

Table A4.20 *Number and Amount of Business Loans Approved by the U.S. Small Business Administration, FY 1977–FY 1984 (Millions of Dollars)*

	Total Loans		
	Number	Gross Amount	SBA Amount
1984	21,272	3,437.5	2,998.2
1983	19,240	2,855.5	2,563.2
1982	15,449	2,035.2	1,779.0
1981	28,689	3,653.6	3,192.6
1980	31,595	3,834.5	3,395.7
1979	30,193	3,401.3	3,004.7
1978	31,720	3,314.3	2,913.6
1977	31,751	3,043.1	2,671.9

Source: U.S. Small Business Administration, Office of Computer Sciences.

Table A4.21 *Direct Business Assistance and Promotion by State and Federal Governments, FY 1983 (Millions of Dollars)*

Type ¹	State Programs	Federal Programs	
		Federally Administered	State Administered
Direct Expenditures	280.0	18,260.2	8,604.0
Major Expenditure Functions			
Small Business Assistance	5.4 ²	1,152.0	61.0
Training, Employment, and Other			
Labor Services	121.4	1,892.0	4,002.0
Research and Development ³	67.4	13,936.0	18.0
International Trade Promotion	36.0	608.0	0.0
Direct Loans	114.8	2,872.6	0.0
Loan Guarantees	23.2	12,095.9	0.0
Venture Capital Corporations	9.7	—	—
Industrial Revenue Bonds	22,800.0 ⁴	—	(4,025.0) ⁵

¹Excluding promotions for agriculture and energy.

²Includes only grants and not state technical assistance to small businesses.

³Civilian research and development.

⁴Total IRB issues, only a portion of which subsidize business through lower interest rates.

⁵Federal revenue loss associated with the cumulative stock of state and local IRB issues.

Source: U.S. Congress, Congressional Budget Office, *Federal Role in State Industrial Development Programs* (Washington, D.C.: Government Printing Office, July 1984), p. 4.

Table A4.22 Number of Banking Offices and Total Assets for All Banks and Bank Holding Companies, 1973-1983

	Number of Banks		Number of Branches		Percent of Offices		Total Assets	
	Banks	Bank Holding Companies	Banks	Bank Holding Companies	Banks	Bank Holding Companies	Banks	Bank Holding Companies
1973	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1974	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1975	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1976	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1977	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1978	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1979	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1980	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1981	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1982	1,411	1,411	26,220	1,411	100	100	1,411	1,411
1983	1,411	1,411	26,220	1,411	100	100	1,411	1,411

Source: Federal Reserve Bank of St. Louis, "Banking Statistics," 1973-1983.

Table A4.23 *Number of Savings and Loan Associations, Number of Offices, and Total Assets, Selected Years*

	1973	1975	1977	1979	1980	1981	1982	1983
All Associations								
Number of Associations	5,170	4,931	4,761	4,684	4,591	4,292	3,825	3,513
Number of Branches	7,036	10,518	13,087	15,508	16,733	17,495	18,712	18,098
Number of Offices	12,206	15,449	17,848	20,192	21,346	21,787	22,545	21,611
Total Assets (Billions of Dollars)	\$271.9	\$338.2	\$459.2	\$579.0	\$629.8	\$664.1	\$707.6	\$771.7
Number of Offices Per Association	2.36	3.13	3.75	4.31	4.65	5.08	5.89	6.15
Total Assets Per Office (Millions of Dollars)	22.3	\$21.9	25.7	\$28.7	\$29.5	\$30.5	\$31.4	35.7
Associations Insured by FSLIC								
Number of Associations	4,163	4,078	4,065	4,039	4,002	3,779	3,343	3,040
Total Assets (Billions of Dollars)	\$264.4	\$329.0	\$447.9	\$566.7	\$615.3	\$639.9	\$686.2	\$754.2

Source: U.S. League of Savings Institutions, *Savings and Loan Fact Book* (Washington, D.C.: U.S. League of Savings Institutions, various years), and Federal Home Loan Bank Board, *Combined Financial Statements of Savings and Loan Associations* (Washington, D.C.: Federal Home Loan Bank Board, various years.)

Chapter 5

Changing Patterns in Employee Benefits

Synopsis

Small businesses have set an impressive record in creating jobs—a record that has remained strong and consistent during recessions and expansions. Pension and health benefits are critical to small firms interested in attracting and maintaining productive workers and competing with large firms in the marketplace.

The United States has a voluntary employee benefit system in which businesses decide the extent and type of benefits they will offer their workers. Firms can purchase pension and health insurance plans in the marketplace from private providers and insurers, or they can self-insure and provide their own packages. This voluntary system also gives employees and the self-employed the opportunity to provide retirement, health, and other benefits for themselves through such options as Individual Retirement Accounts (IRAs).

Even though small businesses are providing jobs for growing segments of the labor force, most small businesses are likely to offer fewer and less comprehensive fringe benefits than larger businesses. The gap between small and large firm coverage has not narrowed and many small businesses are finding it harder to attract and retain a quality work force.

Multiemployer pension plan coverage has declined in firms of all sizes, but even more in small firms. Retirement mechanisms such as IRAs and salary reduction plans—intended to increase coverage and assist highly mobile workers—have been adopted more frequently in large than in small firms.

The principal factor that determines whether a small employer offers pension or health benefits is profitability. Because of their lower profit margin, small businesses are less able than large businesses to afford the costly premiums necessary to maintain benefits. If a business is profitable, the costs and paperwork necessary to establish health or pension benefits may prove prohibitive. Administrative costs are relatively fixed, requiring about the same time and expense to establish a plan for 5 as for 50 employees.

Small businesses face a difficult challenge when they try to match large business benefits. However, their greater flexibility and innovativeness allows small businesses to expand the range of benefit options and experiment with new approaches to benefit delivery. Because the small business market is so large, it represents a potentially profitable growth area for private insurers.

Small businesses are the principal job creating sector of the economy during recessions and expansions. Fringe benefits available in small firms are vital to hiring and retaining productive workers and competing with large firms. This is particularly true for businesses in "high-tech" industries, which require highly trained or specialized personnel who are eagerly recruited by both small and large firms. In these industries, key employees may be more concerned with fringe benefits, such as stock option packages, than basic compensation.

For the past several decades, national policy has encouraged employers to provide fringe benefits for their employees. These benefits typically have included pension or profit-sharing plans and health, group life, and disability insurance. Congress has authorized a steadily widening series of tax-favored expenditures by employees for traditional as well as other benefits, including group legal insurance and employer-supported educational benefits.¹ At the same time, Congress has taken steps to ensure that the benefits offered are accurately disclosed and are administered honestly and fairly. Employers do not have to offer fringe benefits to their employees; but if they are offered, federal regulations strongly influence their form and cost.

What effect have these trends had on small firm owners? Government policy in the pension area has probably had less effect on small businesses than is generally thought. The principal determinant of whether a small employer provides pension or health benefits is the profitability of a business.² Neither the owner nor the employees of a business will be motivated to set aside money for a benefit plan or an Individual Retirement Account (IRA) if the business is unprofitable. The avail-

¹Congress has also expanded incentives for individual retirement savings with the IRA plan. For a summary of the expansion of statutory employee benefits, see Alicia H. Munnell, "Employee Benefits and the Tax Base," *New England Economic Review* (January/February 1984), p. 49; hereafter, "Employee Benefits and the Tax Base."

²*The State of Small Business. Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1984), p. 25; hereafter, *The State of Small Business, 1984*. James Bell and Associates, "Coverage, Characteristics, Administration, and Costs of Pension and Health Care Benefits in Small Businesses" (Washington, D.C.: Office of Advocacy, U.S. Small Business Administration, report prepared under award no. SBA-6059-OA-82, March 1984); hereafter, "Pension and Health Care Benefits."

ability of a tax deduction is no incentive if a business has little cash flow and no taxable profits, as is the case with many small or start-up businesses. On the other hand, if a business with a healthy cash flow is considering tax-deductible contributions to health or pension plans, the costs and paperwork resulting from federal regulations may prove prohibitive. The administrative costs of benefit plans are relatively fixed, requiring about the same time and expense to establish a plan for 5 as for 50 employees. One study shows that it costs a small firm about \$1,080 per employee, but a large firm pays only \$574 per person to establish a pension plan.³

Most small businesses are likely to offer less comprehensive fringe benefits than large businesses. There is no single, simple way to increase fringe benefit coverage for small firm employees. However, a growing economy and increased small business income are essential. Also important is a consistent federal policy that allows maximum financial incentives for fringe benefits while minimizing regulatory burdens. Finally, policymakers must recognize that there are many different and flexible ways to provide employee benefits that will best serve small businesses and their employees.

**Employee
Benefits: A
Voluntary System**

The United States has a voluntary employee benefit system: businesses decide the extent and type of benefits they will offer their workers. Firms can purchase pension and health insurance plans in the marketplace from private providers and insurers, or they can self-insure and provide their own benefit packages.

This voluntary system also gives employees and the self-employed the opportunity to provide retirement, health and other benefits for themselves. The federal Government provides numerous tax incentives to stimulate employer- and employee-provided benefits, such as employee pension plans and IRAs. The financial services sector, including insurance companies, continues to expand the range of benefits available to both firms and individuals. The insurance sector, while it acknowledges the growing small firm market, has had difficulties tailoring health plans to meet the diverse needs of small businesses and their employees.

New types of coverage have expanded the options available to both small and large businesses. Workers

³Bell, "Pension and Health Care Benefits," p. 74

with employer-provided pensions are now also eligible for IRAs, while self-employed workers are now able to provide for their retirement through Keogh and IRA plans. But a key question remains: are these expanding retirement alternatives increasing pension protection and are small businesses narrowing the gap in coverage between themselves and large businesses?

Small businesses are providing jobs for growing segments of the labor force, yet they are less likely than large firms to offer worker benefits. The coverage gap in employee benefits does not appear to be narrowing. As a result, small businesses find it harder to attract and retain productive and high-caliber employees.

Despite the Federal Government's encouragement of retirement savings, many small employers are not providing increased pension coverage for their employees, and they still are not taking advantage of IRAs and other retirement programs.

Small businesses face a difficult challenge when they try to match large business benefits. However, greater flexibility and innovativeness can allow small businesses to offer their employees a wider range of benefit options related to employee performance. For example, small businesses can design profit sharing and stock option plans that aid in recruiting, which in turn can generate a strong incentive for employees to perform well and be rewarded for their efforts. As a result, both the company and the employees profit.

In the services sector, small businesses are experimenting with the novel concept of "leasing employees." Under this arrangement, leased employees receive attractive health and pension plans, often for the first time. And, because leasing companies are larger, they can negotiate lower rates for benefits for the small businesses they serve.⁴

**How Fringe
Benefits
Affect the
Competitiveness
of Firms**

A small business' ability to attract and maintain a quality work force is directly related to the benefits it offers. An employer's compensation package includes wages and expenses for employee retirement, health, life, disability benefits, and other fringe benefits. Tradeoffs between

⁴Leased employees work in a firm which pays a fee to a leasing company. These employees officially work for the leasing company, which pays their salary and fringe benefits and handles all employee-related paperwork for the lessee firm. "Leasing Employees: An Idea Catches On," *U.S. News & World Report* (August 27, 1984), pp. 63-64

wages and non-cash benefits offered by a firm can have a significant impact on its attractiveness. Firms offering equal wages but greater benefits are better able to attract move productive workers and, as a consequence, increase their competitiveness in the marketplace.

New and small businesses are key contributors to an expanding economy because they create the most job opportunities;⁵ small firms with fewer than 100 employees provide two-thirds of all initial jobs. However, one out of six workers who starts out in a small firm moves to a large firm.⁶ This means that small businesses must bear heavy costs in hiring and training replacements for workers who have moved to other firms.

In addition to higher pay, one reason workers leave small businesses for jobs in larger firms is that large businesses usually offer better and more comprehensive employee benefits. For example, in 1983, only 14 percent of wage-and-salary workers in firms with fewer than 25 employees had pension coverage, as compared to over 72 percent of workers in firms with more than 500 employees. Similar but less striking differences are found in health insurance coverage.⁷ When small firms do offer benefits, they are usually more limited than those in large firms. For example, small business pension plans are less likely to provide disability coverage than large business plans, and small business health plans are less likely to offer dental and maternity benefits.

**Federal Incentives
to Benefit
Growth**
*Growth of Tax-
Free Fringe
Benefits*

Since World War II, the major stimulus to the growth of the voluntary employee benefit system in the United States has been tax incentives.⁸ The trend has been to add new forms of employee benefits that receive preferential tax treatment. Over the last 10 years, more tax-favored compensation plans have emerged, which include em-

⁵ *The State of Small Business, 1984*, p. 25. Small enterprises with fewer than 20 employees generated all of the net new jobs in the economy between 1980 and 1982.

⁶ Bradley R. Schiller, "Human Capital Transfers from Small to Large Businesses" (Washington, D.C.: Office of Advocacy, U.S. Small Business Administration, prepared under award no. SB-1A-00067-1, 1981)

⁷ From tabulations of the May 1983 *Current Population Survey of Pension Plan Coverage*, prepared by Simon & Company, Inc., "Analysis of the CPS Data on Size of Enterprise and Self-Employment" (Washington, D.C.: Office of Advocacy, SBA, prepared under award no. SBA-8559-0A-84), hereafter, "An Analysis of CPS Data." Pension availability and health insurance coverage for wage-and-salary work-

ployee stock ownership plans and salary reduction or section 401(k) plans. Section 401(k) plans allow employees to reduce their salary up to 15 percent and invest that tax-free portion of their income in a special account. Other incentives are provided for increased employer services to employees and for "cafeteria" plans that allow employees to select from a menu of benefits including health, vacation, insurance, and retirement.⁹

The tax advantages of these employee benefits are substantial. For example, a tax-qualified pension plan benefits both employers and employees. Employers can claim an income tax deduction for their contributions to the plan. Employees who participate in the plan are not subject to income tax on employer contributions and pension plan investment earnings until benefits are received, which occurs when beneficiaries are probably in a lower tax bracket.¹⁰ While tax inducements have stimulated the growth of employee pension benefits, this growth has occurred disproportionately in large firms, which have been sufficiently profitable to justify establishing benefit programs to avoid taxes on profits. Many small firms, however, have not been profitable enough to justify the additional benefit expenses, and employees must purchase benefits with after-tax dollars. They may lack the necessary expertise and may be unable to afford outside plan administrators to handle the complex tax and legal issues involved in establishing and maintaining benefit plans competitive with those of large businesses.

*Expansion of
Employee
Benefits and
Potential for
Small Business*

Over the last decade, while contributions to retirement and health plans have increased significantly, coverage has ceased to expand. Coverage in large firms—the main providers of employee benefits—has become nearly universal. In 1983, 72 percent of employees in these firms had retirement pensions and 85 percent had health insurance; 65 percent had both pension and health insurance.

ers in 1979 are reported in *The State of Small Business, 1984*, pp. 263-270. Similar differences in benefit coverage in small and large establishments for 1977 are reported in Bell, "Pension and Health Care Benefits."

⁹Munnell, "Employee Benefits and the Tax Base," p. 46.

¹⁰*Ibid.*, p. 48. Flexible compensation plans are also known as cafeteria, supermarket, and smorgasbord plans that permit employees to choose benefits that are: (1) currently taxable, (2) taxable at a future date; or (3) nontaxable. *Fundamentals of Employee Benefits Programs* (Washington, D.C.: Employee Benefit Research Institute, 1983), pp. 159-160; hereafter, *Fundamentals of Benefit Programs*.

¹¹*Fundamentals of Benefit Programs*, p. 22.

coverage. Workers in small firms with fewer than 500 employees have much less coverage: in 1983, 26 percent had pension coverage and 54 percent had health insurance, and 23 percent had both types of coverage.¹¹ Small firms have been unable to increase significantly their coverage levels. However, the wider range of current benefit options and the private sector's growing awareness of the huge untapped small business benefits market, could perhaps solve some of small business' problems in tailoring benefit packages to meet the needs of their diverse work force.

The changing patterns of employee benefits by firm size have significant implications for firm competitiveness. Small businesses, with their adaptive size and greater flexibility, can potentially offer their employees a wider range of benefit options directly linked to on-the-job performance. For example, profit-sharing plans—a benefit plan which allows employees to share in their companies' profits—are more likely to be offered in small than large firms. These plans may be more effective in influencing job performance in small firms because each individual's performance is more closely associated with overall performance than would be the case in large firms. If small businesses can narrow the employee benefit gap relative to large businesses, it is likely that small firms will be better able to attract more qualified workers and reduce costly employee turnover.

*Growing Cost of
Benefits to the
Treasury*

Employee benefits are the largest single source of deductions for the federal personal income tax. In addition, employer contributions for eligible benefits such as health insurance and pension plans are also excluded by statute from the payroll tax base. Consequently, these benefits, which are growing as a proportion of total compensation, have significantly affected both the income and payroll tax bases as well as the costs of the Social Security program.¹²

¹¹Simon & Company, Inc., "An Analysis of CPS Data." These results conform with the benefits survey by the Bureau of Labor Statistics (BLS), U.S. Department of Labor, *Employee Benefits in Medium and Large Firms*, 1983 (Washington, D.C.: U.S. Government Printing Office, August 1984); hereafter, "Benefits in Medium and Large Firms."

¹²Munnell, "Employee Benefits and the Tax Base," p. 43. See also Yung-Ping Chen, "The Growth of Fringe Benefits: Implications for Social Security," *Monthly Labor Review* (November 1981), pp. 3–10.

...about \$70 billion in taxes it otherwise would have collected in 1983—nearly one-fourth of lost tax revenues because of tax credits and deductions. In fiscal year 1985, it is estimated that the Federal Government will lose \$86 billion for pension deductions, including IRAs and the exclusion of employer contributions for medical insurance.¹³

The amount a company spends on tax-free fringe benefits for employees reduces its taxable income. And because these contributions are not counted as employee income, there is also no increase in individual taxes. Tax-free fringe benefits have been growing at a much faster rate than taxable wages. Between 1980 and 1983, nonwage compensation increased almost 26 percent compared to an 18-percent increase in wages and salaries.¹⁴ The loss of tax dollars because of deductions for benefits must be made up through other revenue sources. There is a concern that tax rates have increased because of the expansion of the fringe benefits excluded from federal income and Social Security tax bases. Proposals are being considered to eliminate some deductions entirely or to tax these benefits above a specified dollar amount as an incentive to control health care costs.

Reasons for Benefit Coverage Differences

The disparity in benefit coverage between small and large firms exists for numerous reasons, which include the characteristics of small firms themselves, as well as forces beyond the control of firms.

Small Firm Characteristics Leading to Reduced Benefit Coverage

The profitability of a firm is the major determinant of whether it provides pension coverage for employees.¹⁵ Because of their lower profitability margin, small businesses are less able than large businesses to afford the costly premiums necessary to sustain pension and health benefits.¹⁶ Because they are unable to spread the risks

¹³*Budget of the United States Government, FY 1985, Special Analysis G-Tax Expenditures*, (Washington, D.C.: U.S. Government Printing Office, February 9, 1984), pp. G-46 and G-47.

¹⁴Munnell, "Employee Benefits and the Tax Base," p. 40.

¹⁵Bell, "Pension and Health Care Benefits," p. 35.

¹⁶For a discussion of rate of return-on-equity, see *The State of Small Business 1984*, pp. 207-208. Recent research confirms that larger firms pay a smaller proportion of their compensation as wages, supporting the hypothesis that large firms are able to provide fringes at a lower cost than smaller firms. Stephen A. Woodbury, "Substitution Between Wages and Nonwage Benefits," *American Economic Review* (May 1983), p. 174.

Table 5.1 *Percent of Wage-and-Salary Workers Covered by a Union Contract by Size of Firm, 1979 and 1983*

Covered by Union Contract	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	22.8	6.6	17.1	23.9	35.8
1983	18.8	4.7	14.7	19.4	30.1

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

over many employees, small firms usually pay higher health insurance premiums than large firms. Higher employee turnover may also be a contributing factor to small firms' higher premiums.

Typically, insurers are less willing to underwrite a generous benefit package for a small plan than for a larger plan. Pension benefits also cost more per worker in small firms.¹⁷ Small firms are also less likely to provide pension and health protection because they lack the scale economies in personnel and asset management.¹⁸

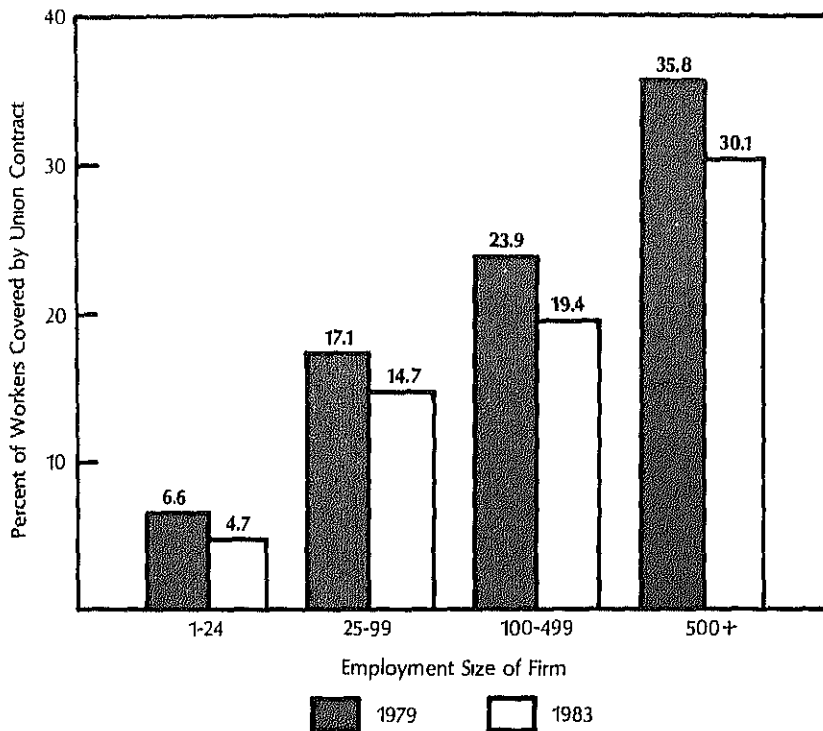
Decline in Unionization

Unionization is another factor contributing to lower employee benefits in small firms. Union membership is more common in large firms and is associated with the probability that an employee will receive benefits. Less than 5 percent of workers in firms with fewer than 25 workers are covered by a union contract, compared to more than 30 percent of workers in large firms with more than 500 workers (Table 5.1 and Chart 5.1). While union contract coverage fell between 1979 and 1983, the decline was disproportionately greater in small firms. Small firms in the construction and mining sectors experienced the greatest declines during this period (Table A5.21).

¹⁷ *Employer-Provided Health Benefits. Coverage Provisions and Policy Issues* (Washington, D.C.: Employee Benefit Research Institute, 1984), p. 36. Bell, "Pension and Health Care Benefits," p. 74. As indicated earlier, administrative costs, on a per-worker basis, are highest for small firms and decrease as firm size increases.

¹⁸ "New Survey Findings on Pension and Benefit Entitlement," *EBRI Issue Brief No. 33* (Washington, D.C.: Employee Benefit Research Institute, August 1984), p. 20. This study also compares the May 1979 and May 1983 Current Population Surveys on Pension Coverage.

Chart 5.1 *Percent of Wage-and-Salary Workers Covered by a Union Contract by Employment Size of Firm, 1979 and 1983*



Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Shifting Industry Employment and Benefits

Pension and health coverage differ significantly by industry. Pension coverage is greatest in industries associated with full-time employment, such as the manufacturing, transportation, and finance sectors, and lowest in retail trade, construction, and services. Health coverage tends to be lower in rapidly growing sectors of the economy, such as in services, with its above-average concentration of younger and part-time workers who are less likely to receive coverage. In addition, the relative growth of different industry sectors has significant implications for benefit growth and coverage. In the long run, as national employment shifts to more service-oriented industries—away from manufacturing—benefit coverage may de-

cline in slow-growth sectors and may increase in high-growth sectors (Tables A5-22, A5-23, and A5-28)

*Work Force
Characteristics*

Characteristics of the small business work force and worker preferences also militate against higher levels of employee benefits in small business.¹⁹ Compared to large businesses, small businesses hire more young workers, pay lower salaries to a larger proportion of workers, hire more workers on a part-time basis, and hire more "secondary workers," i.e., second wage earners in a family with two or more workers.²⁰ Young employees may prefer a higher salary to more comprehensive employee benefits. Because the Employee Retirement Income Security Act (ERISA) does not require employers to provide pension plans to all their employees, not all workers in a firm may be covered. Relatively new and part-time employees are frequently excluded.

*Regulations
Produce Benefit
Coverage
Differences*

Increasingly complex and constantly changing rules and regulations have increased the costs of benefit programs. Many of these costs have been imposed disproportionately on small business. Passed in 1974, ERISA addresses public concern over the security of employer-sponsored pensions and the frequent disparity between benefits promised and actual benefits paid.

ERISA has substantially increased the administrative and benefit cost of pension coverage for small businesses. These increased administrative costs work against the establishment of defined benefit pension plans in small firms. While ERISA may have improved the security of large defined benefit plans, it apparently has dealt a serious blow to small plans. A 1977 Department of Labor report states that as a result of ERISA, small plans' (fewer than 100 participants) average administrative costs increased 72 percent. Plan terminations in 1975 occurred primarily in small firms. Also, new-plan creation declined after ERISA. Nearly 34,000 defined benefit plans were newly qualified in 1973. This figure

¹⁹ See *The State of Small Business, 1984*, Chapter 4 for a more detailed discussion of worker characteristics and size of business.

²⁰ Analysis indicates that increases in establishment size are more influential than increases in wage level in determining the extent of pension coverage in different industries. Bell, "Pension and Health Care Benefits," pp. 23-24.

dropped to fewer than 21,500 benefit plans during the three-year period between 1976 and 1978.²¹

In addition, there is some evidence that the 1980 Multiemployer Pension Plan Amendments Act (MPPAA) and its regulations governing multiemployer plans have undermined participation of new firms in these plans by burdening business owners with increased administrative costs and the possibility of heavy withdrawal liabilities. Small businesses are particularly vulnerable to withdrawal liability assessments because those assessments sometimes exceed the capital assets of the business involved.²²

Reduction in Benefit Costs

Another important factor affecting the level of employee benefit coverage in small businesses is the high cost of providing certain benefits. For example, rising health care costs present a significant impediment to the expansion of health insurance benefits in small firms. Since the late 1970s, annual increases of 20 percent or more in medical plan premiums have been commonplace. For the small employer, the trend has been even more severe, with annual premiums rising as much as 100 percent for firms with fewer than 200 employees.²³

At the same time, both large and small businesses are making major efforts to control costs by developing innovative cost containment measures and adopting low-cost health plan options. Other techniques for keeping costs down include self-insuring, increasing deductibles and employee co-payments, and requiring second opinions for certain kinds of surgery. However, small employers continue to face severe problems in their efforts to contain costs and increase coverage.

Reasons for higher health costs in small businesses include less flexibility in selecting, managing, and designing health care plans with cost-containment features;

²¹A *defined contribution* pension plan prescribes specific employer and/or employee contributions which accumulate in an individual worker's account, while a *defined benefit* plan defines the amount of retirement benefits through a formula covering salary, services, and other variables. A summary of the report is included in *Retirement Income Opportunities in an Aging America: Coverage and Benefit Entitlement* (Washington, D.C.: Employee Benefit Research Institute, 1981), p. 67.

²²Hearings before the U.S. Senate Committee on Labor and Human Resources, Washington, D.C., May 17, 1984.

²³Bureau of National Affairs, *BNA Pension Reporter* (December 12, 1983), p. 1844.

fewer resources to develop cost containment programs, inability to take advantage of group insurance alternatives, and the disproportionate number of elderly workers who face higher health costs

The Continuing Gap in Pension and Health Care Coverage in Small Versus Large Firms

Long-Term Change in Benefit Coverage

During the last decade, there was a sizable increase in types of benefits and in contributions to retirement and health plans, yet the extent of coverage has not expanded. This is mostly because of the near universal benefit coverage in medium-sized and large firms and because small firms have been unable to significantly increase coverage levels. However, broader benefit options and the growing awareness among private carriers of the large potential small business market might solve some of small business' problems. Once these barriers have been eliminated, finance and insurance companies should be able to tailor benefit packages to meet the needs of the small business work force.

Changing Benefit Coverage: 1979-1983

Data from a nationwide benefits survey of the Current Population Survey (CPS) conducted by the Bureau of the Census provides an opportunity to analyze changes in pension plan and health insurance coverage over a four-year period between 1979 and 1983.²⁴

These data permit an analysis of how employee benefits are affected by business cycle conditions. The May 1979 CPS Survey was conducted during a period of relative prosperity and growth, when an economic expansion was in full swing. By contrast, four years later in May 1983, the economy had just passed the November 1982 cyclical trough, marking the most severe recession since World War II.

Between 1979 and 1983, employment increased substantially: the number of non-agricultural wage-and-salary workers rose by 3 million. In addition, small businesses generated most of the net new jobs during this period. Wage-and-salary employment in firms with fewer than 500 employees increased more than 10 percent, while wage-and-salary jobs in firms with 500 or more employees increased only 6.3 percent (Table 5.2). During this period there were major differences in employment changes between small and large firms within industries (Table A5.22). Except in retail trade, finance, and services, small firm employment increased at a greater rate than large firm employment. The changes in

²⁴ See the appendix of this chapter for a detailed description of the CPS Surveys and the data available.

Table 5.2 *Distribution of Wage-and-Salary Workers by Employment Size of Firm, 1979 and 1983*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
1979					
Thousands	54,551 ¹	16,224	8,093	6,771	24,463
Percent	100.0	29.8	14.8	12.4	43.0
1983					
Thousands	59,205 ¹	17,921	8,309	8,030	24,945
Percent	100.0	30.3	14.0	13.6	42.1
Percent Change 1979-1983	8.5	10.5	2.7	18.6	6.3

¹This does not include about 14 percent of private wage-and-salary workers in the CPS Pension Survey who did not answer or did not know the answer to the CPS questions about firm size.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

industry employment during this four-year period directly affect levels of benefit coverage.

The Continuing Gap, 1979-1983

Employer or union pension coverage increases steadily with firm size. In 1983, pension coverage ranged from about 14 percent of workers in the smallest firms with fewer than 25 employees to over 72 percent of wage-and-salary workers in large firms with more than 500 employees (Table 5.3). Overall, there was a 2.7-percent reduction in pension plan coverage of wage-and-salary workers between 1979 and 1983. Coverage declined from 48.3 to 45.6 percent during this period. While this reduction occurred among firms of all sizes, coverage in small firms with fewer than 500 employees declined more than in large firms.

Coverage declined most in the construction industry, primarily because of the recession's effect on heavy and commercial construction and the failure of the industry to fully recover from previous recessions. The major coverage decline in mining may, in part be because of declines in unionization (Table A5.21). In the service, finance, and transportation industries, the proportion of workers in firms offering pensions increased slightly from 1979 to 1983 (Table A5.23). The decline in pension

Table 5.3 *Change in Pension Availability, Eligibility, and Coverage of Wage-and-Salary Workers by Employment Size of Firm 1979 and 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
Employer or Union has Pension Plan					
1979	60.0	20.2	46.2	70.0	88.6
1983	56.4	18.7	40.7	63.6	86.2
Eligible for Pension Coverage¹					
1979	81.1	75.2	75.5	77.1	83.9
1983	81.4	78.0	76.3	76.9	83.8
Covered by Employer or Union Pension Plan					
1979	48.3	14.9	34.5	53.6	74.3
1983	45.6	14.4	30.8	48.6	72.1

¹If an employer or union has a pension plan

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data

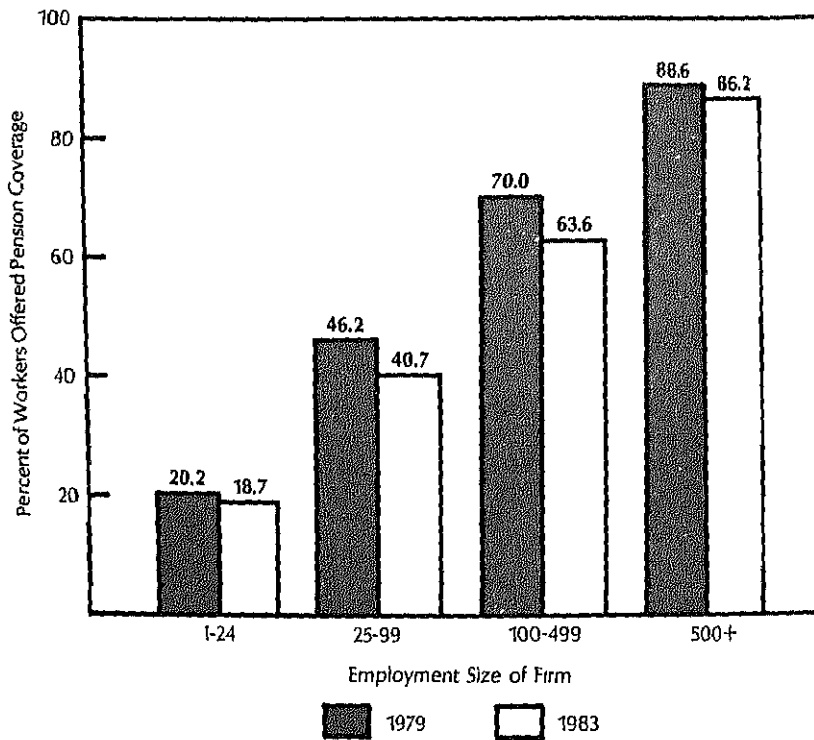
coverage is consistent with the results of the Bureau of Labor Statistics (BLS) 1983 benefits survey, which found that 82 percent of workers in medium-sized and large firms were covered by retirement pension plans, down slightly from 84 percent in 1982.²⁵

Even if an employer or union offers and contributes to a pension plan, not all employees may be eligible to participate. While 56 percent of workers were employed in firms offering a pension plan in 1983, only about 46 percent in these firms actually had pension coverage (Table 5.3 and Chart 5.2). In 1983, more than 60 percent of all workers in firms with employer or union-sponsored pension plans were ineligible to participate because they were either part-time or they were new employees (Table 5.4). Workers in small firms are more likely than those in large firms to be ineligible because of their part-time status, while workers in large firms are more likely to be ineligible because they are new employees.

A small firm is more likely than a large firm to make the entire pension plan contribution, without any payment from the worker. This is because defined contribution plans generally do not either require or allow employee

²⁵BLS, *Benefits in Medium and Large Firms*, p. 3.

Chart 5.2 *Percent of Wage-and-Salary Workers in Firms Offering Pension Plans by Employment Size of Firm, 1979 and 1983*



Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data

contributions, and large firms are more likely to have supplementary defined contribution plans, in which an employer's contribution is contingent on employee contributions.²⁶ Between 1979 and 1983, the proportion of workers in small firms with fewer than 100 employees making payments to their pension plan actually decreased from about 33 to 29 percent. No change occurred during this period in the proportion of workers in firms with 100 or more employees who made payments to their plan (Table 5.5).

Many pension plans pay out benefits other than for normal retirement, such as disability benefits. Small

²⁶Bell, "Pension and Health Care Benefits," pp. 47-48.

Table 5.4 *Reasons for Ineligibility of Wage-and-Salary Workers for Employer or Union Pension Plan by Employment Size of Firm, 1983 (Percent)*

Reasons for Ineligibility	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Job Not Covered	10.5	16.5	10.2	11.2	9.1
Part-Time	22.1	26.3	18.6	20.7	22.4
Too Few Months, New Employee	39.6	28.6	39.7	44.0	40.4
Too Young	6.2	3.6	7.1	5.7	6.8
Too Old	1.4	1.7	2.9	1.5	0.9
Other	20.2	23.3	21.5	16.9	20.4
Total	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

firms, however, are less likely than large firms to include long-term disability benefits. Almost 82 percent of large firm participants are covered by long-term disability benefits, compared to about 70 percent of small firm participants (Table 5.6). However, firms of all sizes are cutting back on this non-mandatory feature. Between 1979 and 1983, disability coverage fell from about 82 to 78 percent for all wage-and-salary workers covered by pension plans; this decline occurred about equally across all firm sizes.

Decline in Multiemployer Pension Plans

A multiemployer benefit or pension plan covers the workers of two or more unrelated firms usually engaged in the same type of employment.²⁷ These plans are often negotiated by unions and are prevalent in small businesses that employ union workers and are too small to justify individual plans. Multiemployer plans are frequently found in industries that hire seasonal or highly mobile workers, such as the construction industry, which accounts for about half of these plans.

Benefit coverage under multiemployer plans has been declining in firms of all sizes, but small firm coverage has declined the most during the last four years. The proportion of workers covered by these plans fell about 5 percent between 1979 and 1983 (Table 5.7 and Chart 5.3). However, the proportion of workers covered in small firms with fewer than 500 employees fell from 30 percent in 1979 to about 22 percent in 1983. Multiemployer plan coverage of workers in large firms fell from 21 to 18

²⁷ *Fundamentals of Employee Benefit Programs*, p. 31

Table 5.5 *Percent of Wage-and-Salary Workers Who Make Payments to Pension Plan by Employment Size of Firm, 1979 and 1983*

Worker Payments to Pension Plans	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	34.3	30.9	35.8	32.0	35.1
1983	33.9	28.3	30.8	32.2	35.6

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.6 *Percent of Wage-and-Salary Workers with Pension Plans Having Long-Term Disability Benefits by Employment Size of Firm, 1979 and 1983*

Pension Plan Has Long-Term Disability	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	81.9	71.4	72.3	76.0	85.7
1983	78.3	68.0	69.6	73.3	81.8

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.7 *Percent of Wage-and-Salary Workers with Multiemployer Pension Plan Coverage by Employment Size of Firm, 1979 and 1983*

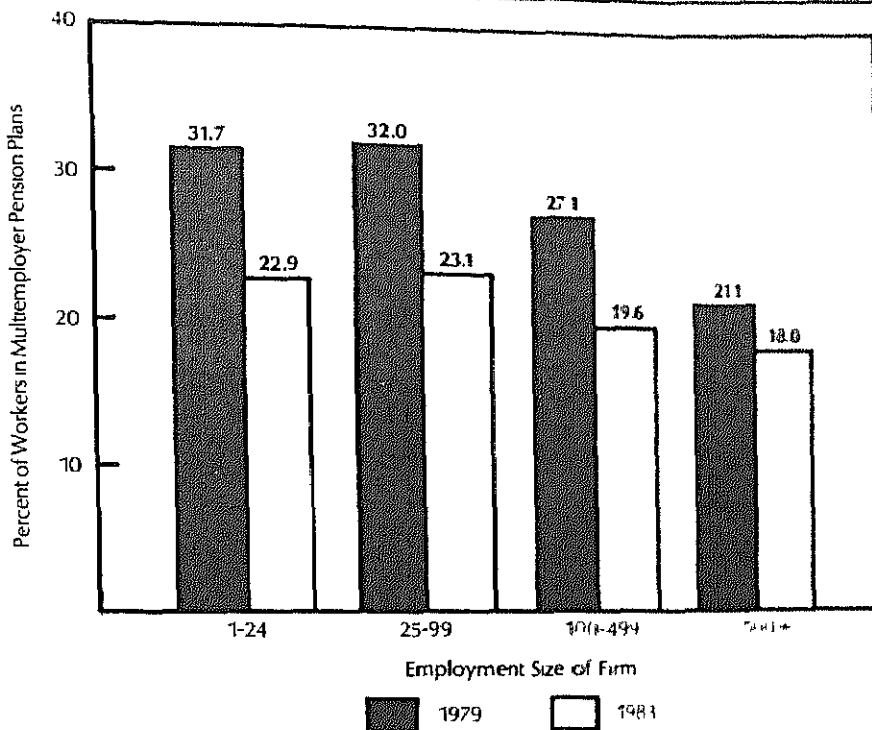
Multiemployer Pension Plan Coverage	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	24.1	31.7	32.0	27.1	21.1
1983	19.2	22.9	23.1	19.6	18.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

percent over this four-year period. Within the construction industry multiemployer plan coverage declined substantially in small firms but rose in large firms (Table A5.24).

Several possible explanations may account for this differential decline. Pension-related legislation enacted in the 1970s and 1980s has increased pension benefits to employees, but also dollar costs to employers. These cost increases have been disproportionately greater for small

Chart 5.3 Multiemployer Pension Plan Coverage by Employment Size of Firm: 1979 and 1983



Source: U.S. Department of Commerce, Bureau of the Census, *Survey of Multiemployer Pension Plans*, May 1979 and May 1983, unpublished data.

businesses. Some evidence indicates that the MPPAA inhibits new firm participation in these plans. In addition, increased administrative costs and heavy withdrawal penalties have increased plan terminations by small businesses that can least afford these costs. Finally, the construction industry's failure to recover fully from previous recessions and the decline in the proportion of the work force that is unionized are other factors contributing to reduced multiemployer plan participation.

Changes in Vesting

Vesting, the entitlement of an employee to accrued pension benefits after a specified number of work years, is a basic indicator of the likelihood that workers will ultimately receive pension benefits. Once vested, an employee is owed some pension benefits upon reaching retirement age, even if the employee leaves the firm.

Table 5.8 *Percent of Wage-and-Salary Workers Vested in Pension Plans by Employment Size of Firm, 1979 and 1983*

Vested	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	59.5	65.6	54.9	53.9	60.5
1983	60.9	64.2	56.2	58.9	61.4

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.9 *Number of Years of Coverage of Wage-and-Salary Workers in Pension Plans by Employment Size of Firm, 1979 and 1983 (Percent)*

Number of Years of Pension Plan Coverage	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979					
Less Than 5 Years	41.0	51.2	49.1	48.8	36.8
5 Years but Less Than 10	23.0	25.4	22.2	23.1	22.8
10 Years or More	36.0	23.4	28.7	28.1	40.4
Total	100.0	100.0	100.0	100.0	100.0
1983					
Less Than 5 Years	33.7	43.5	42.8	38.4	30.1
5 Years but Less Than 10	26.4	28.3	28.6	28.1	25.5
10 Years or More	39.9	28.2	28.6	33.5	44.4
Total	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.10 *Percent of Wage-and-Salary Workers with Pension Plan from Previous Job by Employment Size of Firm, 1979 and 1983*

Pension Plan from Previous Job	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
1979	20.2	18.6	19.6	21.3	21.2
1983	17.5	16.9	17.0	19.5	17.5

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

fore retirement. All qualified private pension plans must meet ERISA's minimum participation and vesting standards.²⁸

Workers employed in the smallest firms offering pension plans are more likely to be vested. About 64 percent of workers in the smallest firms are vested, compared to about 61 percent covered by plans in large firms (Table 5.8). This is because small firms are more likely than large firms to have defined contribution plans, which tend to vest earlier than defined benefit plans. Between 1979 and 1983, in all but the smallest firms, the proportion of vested workers increased, with the largest increase occurring in firms with between 100 and 499 employees. The length of time a worker stays in a pension plan increases steadily with firm size. For example, over 44 percent of large firm workers were in a plan more than ten years, compared to about 28 percent in firms with fewer than 100 employees (Table 5.9). This may reflect the fact that small firms are more likely to hire young workers and have a higher turnover. This pattern changed very little between 1979 and 1983, even though the proportion of workers with longer periods of pension plan coverage increased across all firm sizes. The construction industry experienced a major decline in the proportion of workers vested between 1979 and 1983 (Table A5.25).

About 17 percent of all wage-and-salary workers have pension or retirement plan coverage from a previous job; this earlier coverage does not vary by size of firm in which a wage-and-salary worker is currently employed (Table 5.10). Self-employed workers, especially if they are incorporated, are twice as likely as wage-and-salary workers to be included in a retirement plan from a previous job. This pattern may reflect that a higher proportion of the self-employed than wage-and-salary workers began their careers as workers in large firms with pensions.

*IRAs Less
Prevalent Among
Small Business
Workers*

In 1974, ERISA established Individual Retirement Accounts (IRAs) with the intent to offer workers not covered by employer pension plans the opportunity to set aside tax-deferred income for retirement. The 1981 Economic

²⁸ Under ERISA, most employees become eligible to participate in a retirement plan when they reach age 25 and have completed one year of service. With respect to vesting, pension plans must satisfy one of three alternative formulas: ten-year service rule, graded fifteen-year service rule; or rule of forty-five. *Fundamentals of Benefit Programs*, pp. 13-14.

Table 5.11 *Percent of Wage-and-Salary Workers Who Had an IRA by Employment Size of Firm, 1979 and 1983*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Worker has IRA					
1979	4.0	6.1	5.9	4.2	1.7
1983	17.5	14.9	15.7	18.2	19.7
Employer has IRA Payroll Deduction Plan					
1983	18.0	3.3	9.8	17.1	33.0
Years worker has had IRA¹					
1 Year or Less	10.1	8.0	6.2	11.3	14.5
2 or 3 Years	47.9	39.7	46.3	53.9	56.3
4 or 5 Years	25.7	31.6	31.7	23.4	15.8
More Than 5 Years	16.3	20.7	15.8	11.4	13.4
Total	100.0	100.0	100.0	100.0	100.0

¹ Asked of persons who had established their IRA before January 1, 1982

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

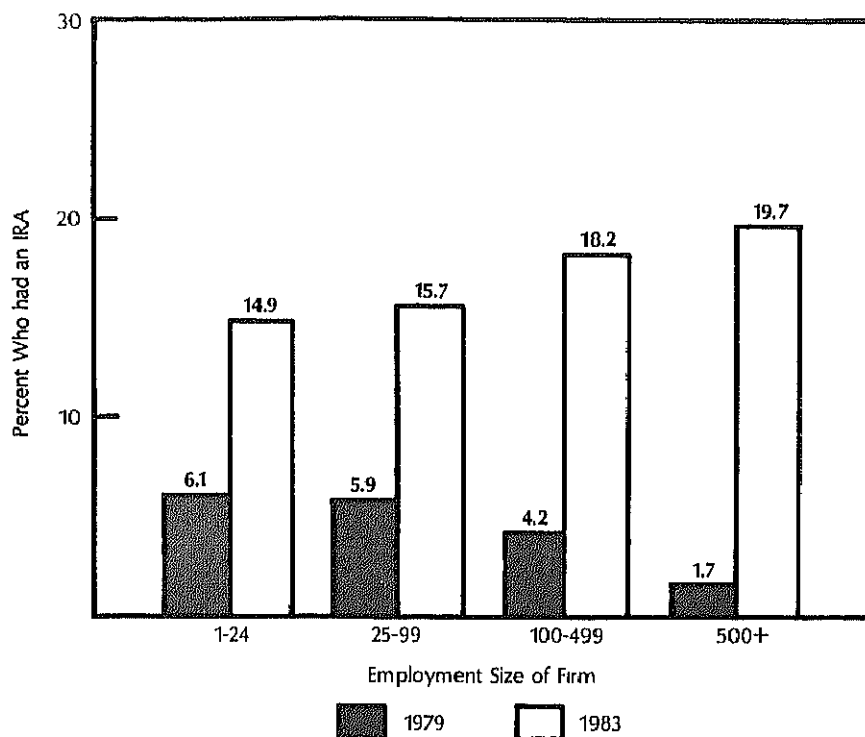
Recovery Tax Act (ERTA) extended IRAs to all workers. IRAs are particularly useful for workers without employer pension coverage and for highly mobile workers with minimal pensions or no pensions.

In 1979, only a small proportion of workers had IRAs. Workers in small firms were more likely than workers in large firms to have IRAs, primarily because a much greater proportion of large-firm workers were covered by employer pension plans and were therefore ineligible for IRAs. With the change in IRA eligibility rules in 1981, more workers now have IRAs.

In 1983, about 16 percent of workers in firms with fewer than 500 employees had IRAs compared to almost 20 percent in large firms (Table 5.11 and Chart 5.4). The reason for this is that workers were no longer ineligible for an IRA if they have employer pension plan coverage, and higher paid workers were more able to purchase IRAs than lower paid workers, who tend to be employed in smaller firms. Workers in small firms have had IRAs longer than workers in large firms.

While workers in small firms are most in need of pension benefits, they are not investing proportionally more in these plans than workers in large firms, who already are protected by more comprehensive plans. Rates of

Chart 5.4 *Percent of Wage-and-Salary Workers Who Had an IRA by Employment Size of Firm, 1979 and 1983*



Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

coverage and usage of IRAs are lowest among those without employer pension plan coverage.²⁹ In general, as of 1983, only about one in six wage-and-salary workers had availed themselves of an IRA. Participation in this form of retirement protection has not been extensive and it is unlikely that it would be an adequate substitute for either Social Security or employer pensions.

Employees in finance, mining, and wholesale trade are most likely to have IRAs; workers in retail trade and construction are least likely. Furthermore, most of the

²⁹Similar findings are reported in "Individual Retirement Accounts: Characteristics and Policy Implications," *EBRI Issue Brief No. 32* (Washington, D.C.: Employee Benefit Research Institute, July 1984), p. 10; hereafter, *EBRI Issue Brief No. 32*.

Table 5.12 *Source of Funds and Main Reason For IRA Identified by Wage-and-Salary Workers by Employment Size of Firm, 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Source of Funds for IRA					
Existing Savings	50.0	42.1	46.4	45.4	56.8
Salary	39.1	44.7	45.1	43.2	33.1
Other Source	10.9	13.2	8.5	11.4	10.1
Total	100.0	100.0	100.0	100.0	100.0
Main Reason for IRA					
Tax Benefits	55.8	48.1	53.5	54.8	60.9
Retirement	41.7	49.5	43.2	41.5	37.0
Other	2.5	2.4	3.5	3.7	2.1
Total	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

Table 5.13 *Percent of Wage-and-Salary Workers With an IRA Contributing to an IRA for Their Non-Working Spouse by Employment Size of Firm, 1979 and 1983*

Established an IRA for Non-Working Spouse	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
1979	16.9	18.1	37.0	17.3	3.7
1983	35.2	25.0	33.1	37.8	40.6

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.14 *Current Value of IRA Assets of Wage-and-Salary Workers Who Have an IRA by Employment Size of Firm, 1979 and 1983 (Percent)*

Current Value of IRA Assets (Dollars)	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Under 1,000	13.0	14.9	11.1	16.4	11.5
1,000-2,499	46.2	38.5	47.0	41.1	51.6
2,500-4,999	26.8	26.3	23.2	27.0	27.8
5,000-9,999	8.1	11.6	11.4	9.0	5.2
10,000-14,999	3.5	5.4	3.9	4.1	2.2
15,000+	2.4	3.3	3.4	2.4	1.7
Total	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

growth in IRAs has occurred in large business-dominated industries (Table A5.26). Although IRAs are meant to provide retirement income security, over 55 percent of all wage-and-salary workers with IRAs cite tax purposes as their primary reason for investing in an IRA. An employee's reason for investing in an IRA varies by size of firm (Table 5.12). A higher percentage of workers in large firms cite tax benefits, rather than retirement income, as the main reason for participating in an IRA.

Tax benefits for workers employed in large businesses are enhanced if workers contribute to an IRA established for a non-working spouse. Almost 41 percent of all large business employees with IRAs also had non-working spouses who had IRAs, compared to approximately 30 percent of workers in small firms (Table 5.13). Employer pension coverage appears to increase the likelihood that spouses will have IRAs.³⁰

Workers in small businesses are less likely to afford an IRA. About 45 percent of small firm workers indicate that their salary is the main source of IRA funds (Table 5.12). By contrast, only one-third of all wage-and-salary workers in large firms indicate that salary is the major source of IRA funds, whereas over 56 percent of these workers acknowledge their savings as the main funding source.

The value of IRAs established by workers in small businesses is currently greater than that of workers in large firms. This is probably because workers in small business are less likely to have employer-provided pensions and have been eligible for IRAs longer than workers in large firms. Also, although a smaller proportion of workers in small firms can afford an IRA, those that can probably view the IRA as a more important supplementary source of retirement income (to Social Security) than their counterparts in large firms. Of all wage-and-salary workers' IRAs, about 85 percent are valued at less than \$5,000. About 20 percent of small firm workers' IRA assets are valued at more than \$5,000, compared to only 9 percent of large firm workers' IRAs (Table 5.14).

Self-employed workers, especially those that are incorporated, are more likely than wage-and-salary workers to have established an IRA. Over 45 percent of individuals who are self-employed and incorporated had an IRA, compared to about 18 percent of all wage-and-salary workers (Table 5.15).

³⁰*Ibid*, p. 13.

Table 5.15 *IRA Coverage of Self-Employed (SE) and Wage-and-Salary (WS) Workers and Their Non-Working Spouses, 1983 (Percent)*

	Total All SE ¹ & WS	SE ² Only		Incor- porated SE	WS and SE ³	WS Only	
		Less than 35 hrs/wk	35 hrs/wk or more			Less than 35 hrs/wk	35 hrs/wk or more
Contribute to IRA	17.6	14.2	23.6	45.7	26.6	11.5	17.9
Those with IRA Who Contribute to IRA for Non-Working Spouse	34.5	21.8	40.5	44.0	37.9	28.2	34.5

¹Excludes a small number of unincorporated self-employed who were also wage-and-salary workers

²Unincorporated self-employed

³Wage-and-salary workers who also had some self-employment

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data

*Salary Reduction
Plans Less
Prevalent Among
Small Business
Workers*

The Revenue Act of 1978 authorized section 401(k) plans that allow employees to reduce their salary by up to 15 percent of compensation and invest that portion in a special tax-free account. As with pension funds, interest is allowed to accumulate tax-free until the funds are distributed. Amendments passed in 1980 permit 401(k) plans to be part of a cafeteria plan. As a result of the Social Security Amendments of 1983, however, contributions to a 401(k) plan are included in taxable wages for payroll tax purposes.¹¹

About 9 percent of all jobholders work for an employer that offers a salary reduction plan (401(k) or 403(b)).¹² Coverage under salary reduction plans increases steadily with the size of a firm; rates of coverage and use of salary reduction arrangements are lowest among those without employer pension coverage.¹³ This may be because the fixed costs of setting up a salary reduction plan are high for firms without pension plans. Coverage ranges from

¹¹Munnell, "Employee Benefits and the Tax Base," pp. 48-49.

¹²Section 403(b) permits a tax-deferred arrangement known as a tax-sheltered annuity and allows employees of a qualified charitable organization or a public school system to exclude from their gross income contributions to a tax-sheltered annuity. *Fundamentals of Benefit Programs*, p. 83.

¹³EBRI Issue Brief No. 32, p. 10.

Table 5.16 *Salary Reduction Plan Coverage and Participation of Wage-and-Salary Workers by Employment Size of Firm 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Employer Offers					
a Salary Reduction Plan (401(k) or 403 (b))	8.5	1.2	4.0	6.0	17.0
Participation in Plan	39.8	45.4	20.8	40.3	41.1

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

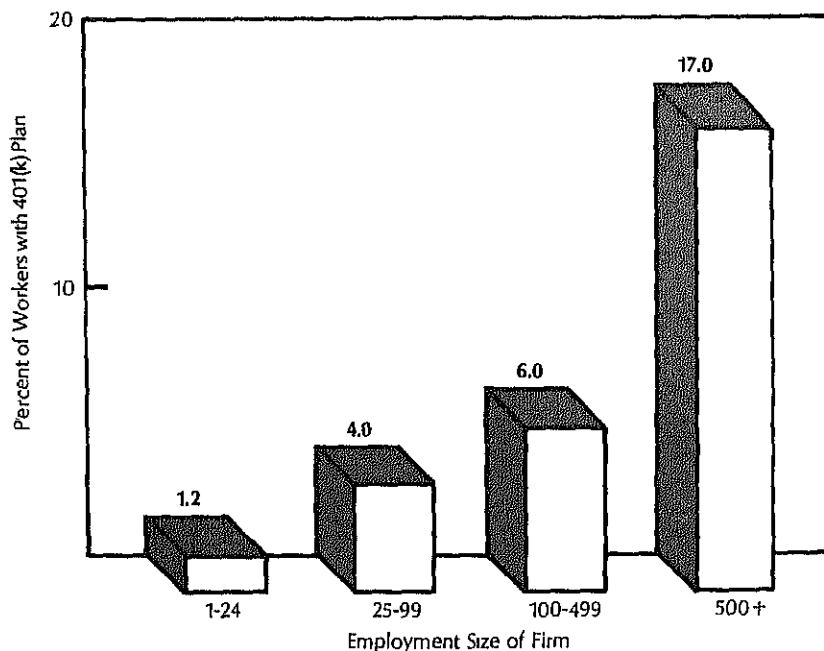
only about 1 percent in the smallest firms to 17 percent of wage-and-salary workers in large firms with more than 500 employees (Table 5.16 and Chart 5.5). Workers in the mining, durable manufacturing, and transportation sectors are most likely to have salary reduction plans (Table A5.27). On the other hand, if an employer offers a salary reduction plan, workers in the smallest firms are the most likely to participate. Over 45 percent of workers in firms with fewer than 25 employees participated in the 401(k) plan, compared to only 41 percent of workers in large firms.

Limited Use of Keoghs by Self-Employed

Self-employed workers in an unincorporated business may establish a Keogh account for themselves as well as their employees. Self-employed persons can contribute up to \$15,000 or 15 percent of earned income (whichever is lower) from their business to a Keogh plan. A person with a Keogh account may also have an IRA. While Keoghs apply only to the self-employed, a person who is currently a wage-and-salary worker, but who may have been self-employed in the past, may also have a Keogh account.³⁴ In 1983, less than 7 percent of the self-employed who worked full-time, part-time or as wage-and-salary employees, had Keogh coverage (Table 5.17). This may be due to the desire of many self-employed to reinvest in their businesses. However, once a Keogh is established, its current value is likely to be substantial.

³⁴Bureau of the Census, U.S. Department of Commerce, CPS Interviewers Memorandum no. 82-06, Section II, May 1983, Survey of Pension and Retirement Plan Coverage, p. 16. See also *Fundamentals of Employee Benefit Programs*, pp. 98-99.

Chart 5.5 *Salary Reduction Plan Coverage of Wage-and-Salary Workers by Employment Size of Firm, 1983*



Source U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data

About 46 percent of all accounts have a value greater than \$10,000, and over 30 percent have a value of more than \$20,000.

No Change in Health Insurance Coverage: 1979-1983

Although health coverage virtually ceased to expand in the 1970s, the cost of health insurance to employers grew substantially. Medical costs climbed much faster than the inflation rate. The central problem facing small firms as well as large firms is the rising cost of health care benefits. Efforts to contain costs could have a disproportional impact on small firm coverage, especially if large firms are more successful at cost containment and if costs shift from large to small firms.

Health insurance is more prevalent than pension coverage because employers usually opt for a health plan as their first benefit program. In very small firms, however, less than 40 percent of workers were directly covered by an employer-provided group health plan in 1983. As firm

Table 5.17 Keogh Coverage of Self-Employed (SE) and Wage-and-Salary (WS) Workers, 1983 (Percent)

	Total All SE ¹ & WS	SE ² Only		Incor- porated SE	WS and SE ³	WS Only	
		Less than 35 hrs/wk	35 hrs/wk or more			Less than 35 hrs/wk	35 hrs/wk or more
Contribute to Keogh	1.0	2.8	6.7	5.8	2.7	0.3	0.4
Current Value of Keogh Assets (Dollars)							
Under 5,000	40.4	20.3	27.1	17.1	55.6	54.0	70.5
5,000– 9,999	14.3	7.4	9.4	24.5	10.8	46.0	12.7
10,000– 19,999	15.0	32.0	17.7	11.1	6.8	—	9.1
20,000– 49,999	17.2	17.7	29.6	18.7	7.4	—	7.7
50,000– 99,999	7.7	16.0	10.6	18.6	1.5	—	—
100,000 or more	5.4	6.7	5.6	10.0	17.9	—	—
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Excludes a small number of unincorporated self-employed who are also wage-and-salary workers

²Unincorporated self-employed

³Wage-and-salary workers who had some self-employment.

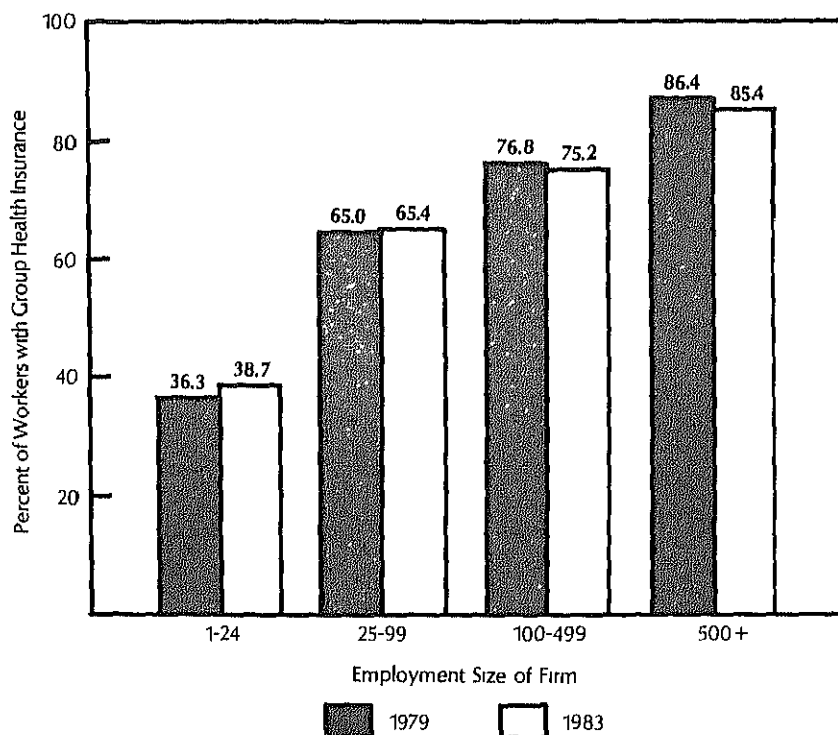
Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

size increases, the availability of employer or union group health insurance also increases—in the largest firms, 85 percent of the workers were covered by their employer's group health plan. Between 1979 and 1983, health insurance coverage for wage-and-salary workers did not change; in both years 67 percent of these workers were covered (Table 5.18 and Chart 5.6).

These overall results are consistent with the BLS survey of medium-sized and large firms, which shows little change in the proportion of workers provided health insurance between 1982 and 1983.³⁵ When specific indus-

³⁵U.S. Department of Labor, *USDOL News* 84-194 (Washington, D.C.: Bureau of Labor Statistics, May 1984), pp. 2-3.

Chart 5.6 *Percent of Wage-and-Salary Workers in Employer's Health Plan by Employment Size of Firm, 1979 and 1983*



Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table 5.18 *Group Health Insurance Coverage of Wage-and-Salary Workers by Employment Size of Firm, 1979 and 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Included in Employer's Health Plan					
1979	67.2	36.3	65.0	76.8	86.4
1983	67.2	38.7	65.4	75.2	85.4
Included in Employer's Health Plan or Covered by Household Member's Policy					
1983	81.8	66.4	80.2	86.7	91.8

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

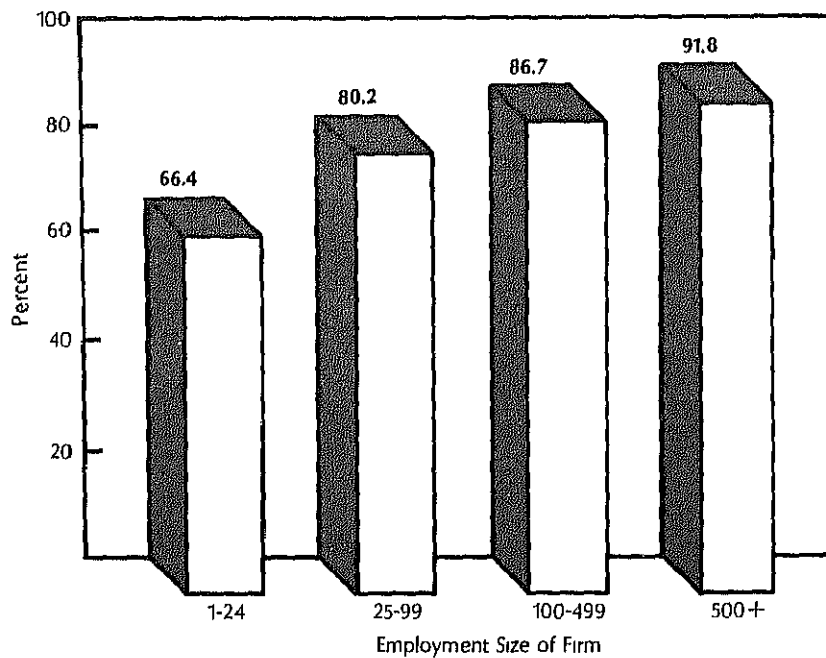
tries are examined, however, certain patterns emerge. Coverage in large firms, across industries, has remained relatively constant over the four-year period. Small firm coverage, on the other hand, rose or declined substantially depending on the industry (Table A5.28). For example, health insurance coverage for workers in small retail firms with fewer than 500 workers declined about 5 percent between 1979 and 1983, while it increased more than 5 percent for small firms in the finance sector.

Low health coverage in small firms is partially attributable to certain characteristics of the work force. Workers in small firms are more likely to be part-time employees covered under the health insurance policy of another household member who works in a large firm. Even full-time workers in the smallest firms are more likely to be covered by another policy. The proportion of workers in small firms (fewer than 25 employees) with health insurance coverage increases from about 39 to more than 66 percent when this indirect coverage is included. In large firms, the corresponding increase is only about 6 percent (Table 5.18 and Chart 5.7). Even taking account of coverage under another household member's health insurance, coverage is still much less prevalent among workers in small firms than in large ones. One out of three workers in small firms has no health insurance compared to only one out of ten in large firms.

In offering group health plan coverage, firm size affects the share an employer must pay. About half of all wage-and-salary workers in firms with fewer than 500 employees have employers who pay the entire health plan costs, compared to only about 45 percent in large firms (Table 5.19). Workers employed in the smallest firms with fewer than 25 employees are most likely to have employers who pay all health plan costs. This probably reflects current efforts on the part of large firms to require contributions to reduce the costs of their health plans.

Elderly workers are more likely to work for small than large firms. For example, in 1979, 90 percent of all workers 65 years old and over were employed in small firms with fewer than 500 employees. By 1983, this percentage had dropped to less than 80 percent. In part, this may be because of the 1982 amendments to the Age Discrimination in Employment Act (ADEA), which require firms with twenty or more employees offering health insurance to also cover workers aged 65 to 69. The amendments also require that the employer plan now become the primary payer of health costs. Before 1983, such a plan

Chart 5.7 *Percent of Wage-and-Salary Workers in Employer's Health Plan or Covered by Household Member's Policy by Employment Size of Firm, 1983*



Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

Table 5.19 *Employer Contribution to Group Health Plan of Wage and Salary Workers by Employment Size of Firm, 1983 (Percent)*

Employer Contribution to Group Health Plan (GHP)	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
Paid for All of GHP	46.7	52.5	46.1	47.2	44.7
Paid for Part of GHP	49.4	40.7	49.5	49.6	52.4
Did not Pay for GHP	3.9	6.8	4.4	3.2	2.9
Total	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data.

Table 5.20 *Health Insurance Coverage of Self-Employed (SE) and Wage-and-Salary (WS) Workers, 1983 (Percent)*

Total Covered by Group Health Plan	All SE ¹ and WS	SE ² Only		Incor- porated SE	WS and SE ³	WS Only	
		Less than 35 hrs/wk	35 hrs/wk or more			Less than 35 hrs wk	35hrs wk or more
Covered by Self	66.5	16.7	27.8	65.1	71.6	43.3	80.0
Covered by Self or Another	79.6	45.2	46.4	74.3	82.4	71.3	87.0

¹Excludes a small number of unincorporated self-employed who were also wage-and-salary workers

²Unincorporated self-employed

³Wage-and-salary workers who also had some self-employment

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data

could exclude workers over 65 years old who were covered by Medicare.³⁶

Changes in the Medicare payment provisions could increase employer health costs more in small than in large firms. In the smallest firms, 3.4 percent of the wage-and-salary work force has Medicare coverage, compared to less than 1 percent in large firms. The proportion of workers with Medicaid coverage is also much higher among the smallest firms, which reflects the tendency of low-income workers to work in small firms.

Full-time wage-and-salary workers are almost twice as likely as full-time self-employed workers to be covered by a group health plan, their own plan, or another household member's policy. While 87 percent of full-time wage-and-salary workers are covered by a health insurance plan, only about 46 percent of self-employed workers are covered (Table 5.20). If incorporated, the self-employed are more likely to have health insurance coverage.

Incorporation may be one indicator of business stability and success and may suggest that greater resources are available for insurance coverage. If a self-employed

³⁶Joseph M. Anderson, David L. Kennell, and John F. Sheils, "Estimated Effects of 1983 Changes in Employer Health Plan/Medicare Payment Provisions on Employer Costs and Employment of Older Workers" (Washington, D.C.: ICF Incorporated, June 1983)

worker also works on a wage-and-salary job, coverage increases significantly and might be a major incentive for holding two jobs

Conclusion

Between 1979 and 1983, the gap between small and large firms in pension and health care coverage continued. There has been virtually no expansion in pension and health insurance coverage in small firms to match the benefits available in large firms. Nevertheless, on an industry-by-industry basis, coverage has fluctuated significantly in small firms. Coverage in large firms, on the other hand, remained relatively stable in all industries.

Multiemployer pension plan benefits coverage declined about 5 percent in firms of all sizes but declined even more in small firms. Pension-related legislation and regulations probably have contributed to these declines.

New retirement mechanisms such as IRAs and salary reduction plans—intended to increase retirement coverage and assist highly mobile workers—have been adopted by workers more frequently in large firms than in small firms. Most workers invest in IRAs more for current tax advantages, rather than for retirement. But because small businesses pay lower salaries to a larger proportion of workers, these workers are less able to use those tax advantages. Only about 6 percent of self-employed workers have substantial retirement assets and are more likely than wage-and-salary workers to have an IRA account.

The challenge facing small business in matching large business, benefit-for-benefit, appears extremely difficult. Given its more adaptable and flexible nature, however, the small business sector has the potential for offering its employees a wider range of benefit options, especially those related to worker performance. Because the small business benefit market is so enormous, it represents a potentially more profitable growth area for private insurers

Appendix Current Population Survey

The major data source for this analysis of changing patterns in employee benefits and firm size is the Current Population Survey (CPS) of households, conducted on a monthly basis by the Census Bureau. The May 1979 and May 1983 Surveys of Pension and Retirement Plan Coverage provide, for the first time, longitudinal fringe benefit information, e.g., pension, disability, and health insurance for workers by size of firm as well as for the self-employed. This information permits a comparative

analysis of changing patterns in benefit coverage of workers in small and large businesses, as well as an analysis of the self-employed.³⁷

The CPS data have been sorted to include only employed private wage-and-salary workers, 16 years old and older. Workers in agriculture and the private household sector have been excluded, as have been government workers (including members of the Armed Forces). A separate analysis has been conducted of self-employed individuals' characteristics, including whether they are self-employed on a full-time or part-time basis, whether they are also wage-and-salary workers, and whether they are incorporated.

Wage-and-salary workers can be divided into four firm employment sizes. The method of analysis used in examining 1979 and 1983 CPS data is also used throughout this chapter.³⁸ Changing patterns in employment benefits are also examined for nine major industries based on CPS data presented in Appendix Tables A5.21 through A5.28.

³⁷The March and May CPS data for both 1979 and 1983 also permit comprehensive analysis of changes in the demographic and economic characteristics of workers in small and large businesses. This will be the subject of later analyses.

³⁸The basic tables used in this study for 1983 were prepared by Simon & Company, Inc., "An Analysis of CPS Data" and for 1979 were prepared by Sheldon Haber, "Tabulations from Current Population Survey" (Washington, D.C.: Office of Advocacy, SBA, prepared under award no. SBA-82-2382). The May 1979 and May 1983 CPS include five firm-size groups categorized as follows.

	<i>Number of Employees</i>
Smallest	1-24
Small	25-99
Intermediate	100-499
Large	500-999
Largest	1,000+

The largest two size groups have been combined in this chapter analysis.

Table A5.21 *Percent of Wage-and-Salary Workers Covered by a Union Contract by Industry and Employment Size of Firm, 1979 and 1983*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
All Industries					
1979	22.8	6.6	17.1	23.9	35.8
1983	18.8	4.7	14.7	19.4	30.1
Mining					
1979	40.4	10.0	40.8	25.0	45.8
1983	24.9	1.7	6.7	32.1	29.4
Construction					
1979	31.3	20.1	42.3	52.6	44.0
1983	24.8	15.0	28.5	38.2	54.8
Manufacturing, Durable					
1979	39.3	8.8	21.9	25.7	48.1
1983	31.3	9.8	18.9	27.6	38.6
Manufacturing, Non-Durable					
1979	35.0	9.7	23.4	38.1	41.4
1983	28.8	5.6	22.1	30.7	35.1
Transportation, Communications & Public Utilities					
1979	51.3	14.5	35.2	36.9	64.4
1983	45.5	6.1	29.0	35.0	57.9
Wholesale Trade					
1979	11.3	6.6	10.6	13.5	16.0
1983	10.5	4.3	9.4	12.0	9.0
Retail Trade					
1979	11.2	3.4	9.7	18.0	20.2
1983	11.3	2.0	8.4	12.3	22.2
Finance, Insurance & Real Estate					
1979	5.0	2.7	7.1	7.0	5.1
1983	5.5	3.4	4.2	3.1	7.4
Miscellaneous Services					
1979	9.0	3.3	8.7	15.7	15.4
1983	9.7	2.7	12.3	13.8	17.0

Data exclude Agriculture

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.22 *Distribution of Wage-and-Salary Workers by Industry and Employment Size of Firm, 1979 and 1983*

	All firms	Employment Size of Firm			
		1-24	25-99	100-999	500+
All Industries					
1979 (Thousands)	54,553	16,225	8,093	6,771	23,464
1983 (Thousands)	59,209	17,921	8,308	8,030	24,945
Percent Change	+7.9	+10.5	+2.7	+18.6	+6.3
Mining					
1979	643	42	57	74	470
1983	684	76	53	90	465
Percent Change	+6.4	+81.0	-7.0	+21.6	-1.1
Construction					
1979	3,658	2,048	729	459	422
1983	3,541	2,063	703	345	428
Percent Change	-3.2	-0.1	-3.6	-24.8	+1.4
Manufacturing, Durable					
1979	10,269	841	1,122	1,261	7,045
1983	9,324	1,120	1,095	1,234	5,875
Percent Change	-9.2	+33.2	-2.4	-2.1	-16.6
Manufacturing, Non-Durable					
1979	5,940	596	905	991	3,448
1983	6,236	805	776	1,062	3,593
Percent Change	+5.0	+35.1	-14.3	+7.2	+4.2
Transportation, Communications & Public Utilities					
1979	4,050	641	421	317	2,671
1983	4,101	537	441	503	2,619
Percent Change	+1.3	-16.2	+4.8	+58.7	-1.9
Wholesale Trade					
1979	2,988	983	640	533	832
1983	3,422	1,241	745	541	895
Percent Change	+14.5	+26.2	+16.4	+1.5	+7.6
Retail Trade					
1979	10,878	4,599	1,810	939	3,530
1983	12,070	4,724	1,739	1,210	4,396
Percent Change	+11.0	+2.7	-3.9	+28.9	+24.5
Finance, Insurance & Real Estate					
1979	4,017	1,059	604	531	1,823
1983	4,640	935	626	697	2,382
Percent Change	+15.5	-11.7	+3.6	+31.3	+30.7
Miscellaneous Services					
1979	12,110	5,416	1,805	1,666	3,223
1983	15,191	6,420	2,130	2,348	4,292
Percent Change	+25.4	+18.5	+18.0	+40.9	+33.2

Data exclude Agriculture.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.23 *Wage-and-Salary Workers Covered by Pension Plans by Industry and Employment Size of Firm, 1979 and 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
All Industries					
1979	48.3	14.9	34.5	53.6	74.3
1983	45.6	14.4	30.8	48.6	72.1
Mining					
1979	75.1	18.0	40.8	55.7	86.2
1983	75.3	1.8	39.3	75.8	90.6
Construction					
1979	36.6	18.3	51.1	65.7	68.8
1983	29.0	15.6	33.1	54.5	65.8
Manufacturing, Durable					
1979	73.4	20.2	39.4	64.3	86.3
1983	70.4	16.5	37.9	58.1	88.2
Manufacturing, Non-Durable					
1979	65.3	19.5	35.9	54.4	83.0
1983	61.1	16.2	34.2	52.9	78.7
Transportation, Communications & Public Utilities					
1979	66.8	19.8	46.1	67.1	80.7
1983	68.5	17.0	42.4	53.0	85.9
Wholesale Trade					
1979	51.3	27.1	44.4	57.3	81.2
1983	48.2	25.0	39.7	58.2	80.1
Retail Trade					
1979	24.7	7.8	21.2	35.1	47.0
1983	23.6	6.4	17.6	29.2	44.7
Finance, Insurance & Real Estate					
1979	52.2	15.4	44.1	60.7	74.2
1983	54.7	19.3	40.3	52.5	68.6
Miscellaneous Services					
1979	32.4	15.3	26.9	46.0	56.8
1983	33.1	16.4	27.5	44.3	56.0

Data exclude Agriculture

Source: U. S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.24 *Multiemployer Pension Coverage of Wage-and-Salary Workers by Industry and Firm Size, 1979 and 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500 +
All Industries					
1979	24.1	31.7	32.0	27.1	21.2
1983	19.2	22.9	23.1	16.6	18.0
Mining					
1979	34.1	100.0	35.5	30.2	33.6
1983	27.5	0.0	0.0	20.9	29.9
Construction					
1979	57.1	62.3	58.6	57.2	48.4
1983	48.3	41.2	46.6	51.0	57.0
Manufacturing, Durable					
1979	18.8	31.7	31.5	18.3	17.7
1983	16.4	36.6	21.2	16.0	15.4
Manufacturing, Non-Durable					
1979	22.0	30.5	32.1	26.6	19.6
1983	16.2	11.5	21.6	15.9	16.0
Transportation, Communications & Public Utilities					
1979	26.2	28.9	40.1	24.7	25.1
1983	19.2	24.4	20.6	25.5	18.3
Wholesale Trade					
1979	18.6	22.3	17.6	18.5	17.4
1983	14.3	24.2	13.5	11.9	11.4
Retail Trade					
1979	28.6	32.1	29.2	40.2	25.2
1983	23.7	20.8	29.4	13.9	25.2
Finance, Insurance & Real Estate					
1979	12.8	32.1	29.2	40.2	25.2
1983	10.9	9.9	11.3	14.7	10.1
Miscellaneous Services					
1979	27.3	25.1	24.9	27.7	28.7
1983	21.0	18.7	22.9	21.9	21.2

Data exclude Agriculture.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.25 Percent of Wage-and-Salary Workers Vested in Pension Plans by Industry and Employment Size of Firm, 1979 and 1983

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
All Industries					
1979	59.5	65.6	54.9	53.9	60.5
1983	60.9	64.2	56.2	58.9	61.4
Mining					
1979	61.2	72.1	34.8	81.5	60.4
1983	65.9	0.0	97.4	60.6	65.6
Construction					
1979	65.0	68.7	55.1	65.1	72.0
1983	57.0	59.8	47.1	72.2	51.6
Manufacturing, Durable					
1979	60.8	62.6	54.7	51.4	62.3
1983	65.0	57.2	65.0	63.7	65.4
Manufacturing, Non-Durable					
1979	62.7	72.8	63.5	69.1	61.2
1983	64.4	61.7	55.8	63.2	65.4
Transportation, Communications & Public Utilities					
1979	60.5	57.9	48.9	47.8	62.7
1983	67.3	68.7	54.5	57.7	69.3
Wholesale Trade					
1979	54.8	66.7	54.8	53.7	51.1
1983	62.7	69.8	57.3	57.4	64.2
Retail Trade					
1979	54.3	67.4	54.6	44.6	53.3
1983	54.5	59.9	62.8	42.0	54.5
Finance, Insurance, & Real Estate					
1979	55.4	56.9	52.2	38.1	59.6
1983	51.1	60.8	51.4	56.2	49.2
Miscellaneous Services					
1979	58.3	66.0	54.8	51.2	58.6
1983	56.5	66.4	51.4	57.1	52.9

Data exclude Agriculture.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.26 *Percent of Wage-and-Salary Workers Who Had an IRA by Industry and Employment Size of Firm, 1979 and 1983*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-499	500+
All Industries					
1979	4.0	6.1	5.9	4.2	1.7
1983	17.5	14.9	15.7	18.2	19.7
Mining					
1979	2.0	3.2	0.0	0.5	2.4
1983	23.2	4.0	31.9	28.1	24.4
Construction					
1979	6.0	6.0	6.4	6.6	4.4
1983	13.7	12.4	10.3	22.6	19.0
Manufacturing, Durable					
1979	2.3	4.6	7.4	2.6	1.1
1983	20.1	16.0	16.1	16.6	22.3
Manufacturing, Non-Durable					
1979	3.3	6.1	5.4	6.3	1.5
1983	20.0	18.3	9.9	20.4	22.3
Transportation, Communications & Public Utilities					
1979	3.1	4.2	2.0	5.4	2.7
1983	20.3	18.7	19.2	21.9	20.6
Wholesale Trade					
1979	6.2	7.8	8.9	6.5	1.9
1983	22.7	22.8	20.9	23.4	23.5
Retail Trade					
1979	4.1	6.2	5.2	3.2	1.1
1983	10.1	9.1	11.3	8.9	11.0
Finance, Insurance & Real Estate					
1979	4.4	8.0	8.6	2.9	1.3
1983	23.3	22.1	23.4	25.4	23.1
Miscellaneous Services					
1979	4.7	5.9	4.8	3.8	3.0
1983	17.6	16.6	17.9	17.7	18.8

Data exclude Agriculture

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Table A5.27 *Salary Reduction Plan¹ Coverage of Wage-and-Salary Workers by Industry and Employment Size of Firm, 1983 (Percent).*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-199	500+
All Industries	8.5	1.2	4.0	6.0	17.0
Mining	16.3	0.0	0.0	15.7	21.3
Construction	1.9	0.9	2.4	1.9	6.8
Manufacturing, Durable	13.9	2.3	2.9	4.1	20.6
Manufacturing, Non-Durable	9.9	0.5	1.9	4.6	15.8
Transportation, Communications, & Public Utilities	13.0	2.0	7.9	5.6	18.1
Wholesale Trade	7.4	1.2	3.0	5.7	20.6
Retail Trade	4.2	0.3	1.6	3.9	10.7
Finance, Insurance & Real Estate	11.1	1.8	4.2	5.9	18.4
Miscellaneous Services	7.9	1.5	7.5	9.0	17.2

¹Includes 401(k) and 403(b) plans

Data exclude Agriculture

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1983, unpublished data

Table A5.28 *Wage-and-Salary Workers in Employer's Group Health Insurance Plan by Industry and Employment Size of Firm, 1979 and 1983 (Percent)*

	All Firms	Employment Size of Firm			
		1-24	25-99	100-199	500+
All Industries					
1979	67.2	36.3	65.0	76.8	86.4
1983	67.2	38.7	65.4	75.2	85.4
Mining					
1979	89.9	36.5	75.6	89.8	95.3
1983	92.5	56.3	83.4	91.4	99.7
Construction					
1979	57.8	38.9	74.1	85.2	89.7
1983	55.1	39.7	70.2	73.2	90.5
Manufacturing, Durable					
1979	89.6	51.0	77.0	89.2	96.1
1983	89.6	59.2	78.6	90.3	97.2
Manufacturing, Non-Durable					
1979	83.6	49.9	68.3	82.1	93.9
1983	83.7	50.7	69.3	84.7	93.7
Transportation, Communications & Public Utilities					
1979	84.8	51.3	70.1	86.2	94.9
1983	86.6	50.0	78.4	85.8	95.4
Wholesale Trade					
1979	75.4	55.6	83.0	84.3	87.5
1983	77.2	62.5	81.2	83.7	91.2
Retail Trade					
1979	44.6	28.2	51.1	56.8	59.3
1983	43.9	25.0	45.1	52.9	61.1
Finance, Insurance & Real Estate					
1979	71.0	40.4	70.2	74.4	88.0
1983	78.0	49.1	72.2	79.9	90.3
Miscellaneous Services					
1979	52.7	32.1	56.0	69.1	76.3
1983	55.8	36.1	61.4	68.4	75.3

Data exclude Agriculture.

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Survey*, May 1979 and May 1983, unpublished data.

Chapter 6

Women-Owned Business

Synopsis

Like other small business owners, women entrepreneurs are profiting from the fundamental long-term shift of employment toward the service industries. Women are strongly represented in this growing sector. Combined, miscellaneous services, retail trade, and finance, insurance and real estate accounted for 91 percent of female-operated sole proprietorships and 73 percent of all nonfarm sole proprietorships in 1982.

Women-owned businesses are the fastest growing segment of the small business population. From 1977 to 1982, the number of female nonfarm sole proprietorships increased at an annual rate of 6.9 percent. All nonfarm sole proprietorships grew at an annual rate of 3.7 percent. Female-operated nonfarm sole proprietorships increased in share of firms from 22.6 percent in 1977 to 26.2 percent in 1982. By 1984 there were 3 million female-operated nonfarm businesses in the United States, according to Small Business Administration estimates.

From 1977 to 1982, the share of business receipts of female-operated nonfarm sole proprietorships also increased modestly from 7.8 to 9.6 percent. However, their average receipts still lag those of all nonfarm sole proprietorships and the average net income of female-operated firms declined as a result of the recent recession.

Through previous job experience and increasing educational attainment, women are acquiring skills and knowledge that can be translated into entrepreneurship. They are entering nontraditional industries for women: the sectors with the highest growth rates are those to which women are new entrants, such as security brokerage, general building contracting, and legal services.

Geographically, women-owned firms are distributed in much the same pattern as other businesses. Women-owned firms in California, Texas, New York, Illinois, and Florida accounted for some 37 percent of both women-owned and total sole proprietorships. Firms operated by women tend to be better represented in areas of high population, income or employment, such as New York, California, and the District of Columbia.

Introduction

Women-owned small businesses are in the mainstream of economic growth. Long-term social, economic, and technological changes have shifted U.S. industrial employment from a predominately agricultural, mining,

and manufacturing base toward the service sector. This employment trend has favored the growth of many small firms that can readily respond to specialized demands. Entrepreneurial activity has expanded greatly, creating thousands of new and innovative small businesses and new jobs. Women-owned businesses, too, are riding the wave of this trend; they are the fastest growing segment of the small business population.

Women in record numbers are starting new businesses. In 1977, there were 22 female nonfarm sole proprietors for every 1,000 women of business age (aged 16 or over). By 1982, there were 32 per 1,000 women 16 or over, up 45 percent. In comparison, the total number of nonfarm sole proprietors increased 21 percent, from 52 to 63 entrepreneurs per 1,000 persons aged 16 or over (Table A6.12 and Chart 6.1).¹ The U.S. Small Business Administration (SBA) estimates that in 1984, the total number of women-owned nonfarm businesses, including corporations and partnerships, reached 3 million firms (Table 6.1).²

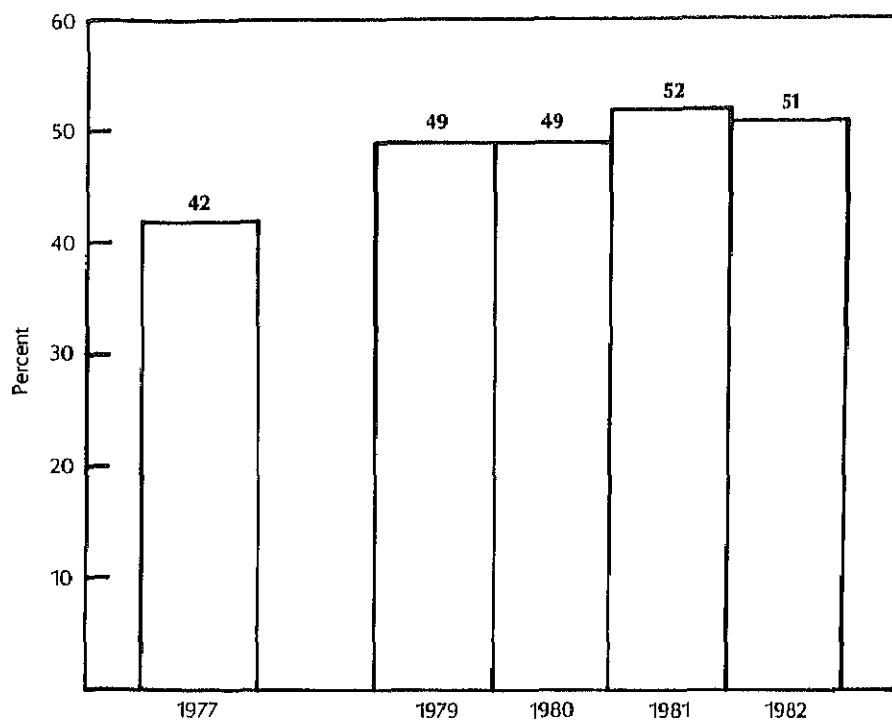
What are the reasons for this rapid increase in women-owned businesses? Three factors have been particularly important. First, as wage-and-salary workers, women have acquired skills and experience that can be translated into entrepreneurship. The female labor force increased as a percent of the female population every year from 1972 (43.7 percent) to 1982 (52.1 percent) (Table A6.13). Working in traditional occupations, women have gained skills which they are applying in business ventures from retail sales to data processing and health care.

Women also are moving into a wide range of traditionally male-dominated occupations, from construction to law. Between 1972 and 1982, the number of women increased in all but a few occupations as a percentage of total employment (Table A6.14). They were employed as professional and technical workers, managers, and administrators in areas with direct entrepreneurial potential. They gained experience as computer specialists, lawyers, doctors, dentists, pharmacists, bank officials,

¹The age range of sole proprietors is not known, but a usable proxy is the 1980 age range of male and female self-employed persons: 16 to 90 years. This information was derived from unpublished tabulations of the 1980 Census of Population 1/1,000 sample.

²See the appendix of this chapter for sources and techniques used to estimate women-owned businesses in the United States.

Chart 6.1 *Number of Female Sole Proprietors per 1,000 Persons¹ as a Percent of Number of All Sole Proprietors per 1,000 Persons, 1977, 1979-1982*



¹The relevant population segment for this table includes only those persons of age for business activities

Sources: U.S. Department of Commerce, Bureau of the Census, *Estimates of the Population*, various years; and U.S. Department of the Treasury, Internal Revenue Service, *Sole Proprietorship Returns*, 1977, 1979-1982

and financial managers. While most of the women in sales continued to be concentrated in low-wage retail sales jobs, the number in real estate, insurance, manufacturing, sales, and finance and investment increased.

In blue collar occupations, more females became work supervisors, painters, construction and maintenance workers, and printing craftworkers. They made substantial inroads in telephone installation and repair and worked as gas station attendants, butchers, welders, and bus and truck drivers. As women accumulated experience in these fields, they became better prepared to operate their own businesses.

A second factor opening new doors for women is their achievement in higher education. The National Science

Table 6.1 *Number of Enterprises in the Small Business Data Base, by Type of Legal Entity and Sex of Owner-Operator, 1984*

Type of Legal Entity	Thousands			Percent		
	All Nonfarm	Male-Operated	Female-Operated	Male-Operated	Female-Operated	Female-Operated as a Percent of Type
Total	5,797	3,938	546	100.0	100.0	9.4
Corporations	2,731	1,877	690	47.1	52.5	6.0
Partnerships	646	430	18	11.2	15.1	2.8
Sole Proprietorships	2,420	1,631	364	41.7	32.4	15.0

Source: Small Business Data Base, Ownership Characteristics Survey, 1984

Note: Estimates of the Small Business Administration are derived from the Ownership Characteristics Survey, 1984. The Survey represented a random sample of firms selected from 7,478,780 firms on the Master Establishment List (MEL) that is comprised of 8.1 million establishment and enterprise records. The MEL is created by matching two commercially available sources, the Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval, Inc., file, a "Yellow Pages" telephone listing.

Of the 224,588 questionnaires mailed in the Survey, 39,972 could not be delivered and 163,357 represented nonrespondents from which a random subsample of firms was drawn for a telephone followup. A statistical technique using 1,088 follow-up telephone questionnaires was used to adjust for potential nonresponse biases. No adjustment was made for the 39,972 firms to which the questionnaires could not be delivered.

The MEL and the Ownership Characteristics Survey do not include numerous part-time and intermittent business activities of wage-and-salary workers that are included in sole proprietorship (Schedule C) estimates of the Internal Revenue Service (IRS) of business tax returns filed. In 1982, the last year for which IRS sole proprietorship data are available, the distribution by sex of owner/operator was 7,064,000 (69.9 percent) male-operated; 2,649,000 (26.2 percent) female-operated, and 392,000 (3.9 percent) male-female jointly operated.

The IRS 1984 projection for sole proprietorship tax returns is 10,685,000. Distributed on the basis of the 1982 percentages the number of returns of female operated nonfarm businesses is approximately 2.8 million. This figure combined with the SBA 1984 estimates for corporations and partnerships provides a 1984 total estimate of female-operated nonfarm businesses of approximately 3 million firms.

Foundation recently examined the educational accomplishments of women since the early 1970s:

Women accounted for more than half of the new college freshmen in 1976 and more than half of the enrollment in higher education in 1979. From 1973 to 1983 they increased their share of doctor's degrees from 18 to 34 percent. In 1983 they earned 4,470 of 17,900 science and engineering doctorates awarded and the 1983 annual gain was one of the largest over the 10-year period. Approximately 83 percent of their doctorates were in psychology (1,570 degrees), life sciences (1,360 degrees) and social sciences (790 degrees). Only 3 percent (125 degrees) were in engineering. However, the potential for women in engineering has improved greatly. Full-time enrollment of women in undergraduate engineering increased from 34,000 in 1978 to 64,600 in 1983 or by 90 percent.³

Educational achievement of women promises to improve their potential for business ownership and the quality of the activities they undertake. Through education, more women are positioning themselves for business opportunities in such expanding fields as aerospace, telecommunications, electronics, and biomedical engineering. Educational accomplishments also improve their income potential. In 1980, the average incomes of self-employed males and females with more than four years of college were 74 and 72 percent, respectively, higher than the average of all persons in each group (Table A6.15). Although the 1980 average income of females at all levels of educational attainment was still far less than the average income of their male counterparts, education is providing one route to greater entrepreneurial opportunity.

Perhaps the most important reason for the rapid rise of women's business ownership is the expanding role of small business in the Nation's economic growth, especially in the service sector. The long-term fundamental shift of U.S. industrial employment from agriculture, mining, and manufacturing to the service sector has created an "entrepreneurial economy." The role of small businesses as innovators and job generators in the econo-

³National Science Foundation, *Science Resources Studies Highlights, Women and Non-U.S. Citizens Responsible for Increase in Production of Science and Engineering Doctorates in 1983* (Washington, D.C.: National Science Foundation, September 28, 1984), pp. 1 and 3.

my now is recognized and well documented.⁴ Small enterprises also have been the leading generators of new jobs in services, the fastest-growing employment sector. Women are identifying with and participating in this trend. In fact, most women-owned businesses are in the service sector.

The area of greatest potential for new jobs and entrepreneurial opportunities from 1982 to 1995 is in "miscellaneous and other services." These industries span an array of personal, business, amusement and recreational, medical, and professional services and are accessible to women-owned businesses. By 1995, miscellaneous and other services are expected to account for one-fourth of the total employment, with principal gains in business, professional, and medical and health care services. The most new jobs will be in business services, where increases are expected for personnel supply, business consultants, janitorial and protective services, and computer and data processing services.⁵

In its broadest sense, the service sector includes not only the miscellaneous and other service industries but also the major industry divisions of transportation, communications, and public utilities; finance, insurance, and real estate; and the retail and wholesale trades. Under this broader definition, the proportion of small and women-owned businesses in service industries is even greater.

Service sector industries, although vastly different in many ways, are linked by common traits that lend themselves to small and women-owned business ventures. Many of these industries are dominated by characteristically labor-intensive, small-scale operations that require limited capitalization in fields that are relatively easy to enter. Many utilize skills that women have traditionally acquired in other societal roles and occupations—in human resource development, health care, education, consumer relations, and sales.

Recent technological advances and changes in lifestyles are encouraging innovations in the delivery of many diverse services. Small firms are able to meet these

⁴U.S. Small Business Administration, *The State of Small Business. A Report of the President*, (Washington, D.C.: U.S. Government Printing Office, 1984), pp. 24–28.

⁵Valerie A. Personick, "The Job Outlook Through 1995: Industry Output and Employment Projections," *Monthly Labor Review* (Washington, D.C.: U.S. Government Printing Office, November 1983), pp. 24–36.

specialized demands because they are more flexible than large firms in deploying resources. This flexibility enables entrepreneurs to introduce rapid change in service delivery through innovations in management and technology.

Women have developed a particular niche in the new entrepreneurial economy. Many excel in the kinds of skills, knowledge, and experience needed in the burgeoning service sector. They bring unique perspectives to their work that can improve the quality of goods and the delivery of services. Because they are new entrants to the marketplace, women are not tied to traditional modes of doing business. As small firms, women-owned businesses have the opportunity to be innovative and the flexibility to meet new challenges.

Women-Owned Businesses in the U.S. Economy

Women business owners have moved into the entrepreneurial mainstream. The latest view of women-owned or operated businesses emerges from the 1982 snapshot of the Internal Revenue Service (IRS) female-operated nonfarm sole proprietorships and the 1984 SBA estimate of female-owned corporations, partnerships, and sole proprietorships.⁶ These data show that female-operated firms are almost as diverse in industrial representation as all nonfarm sole proprietorships and firms included in the SBA Small Business Data Base (SBDB).

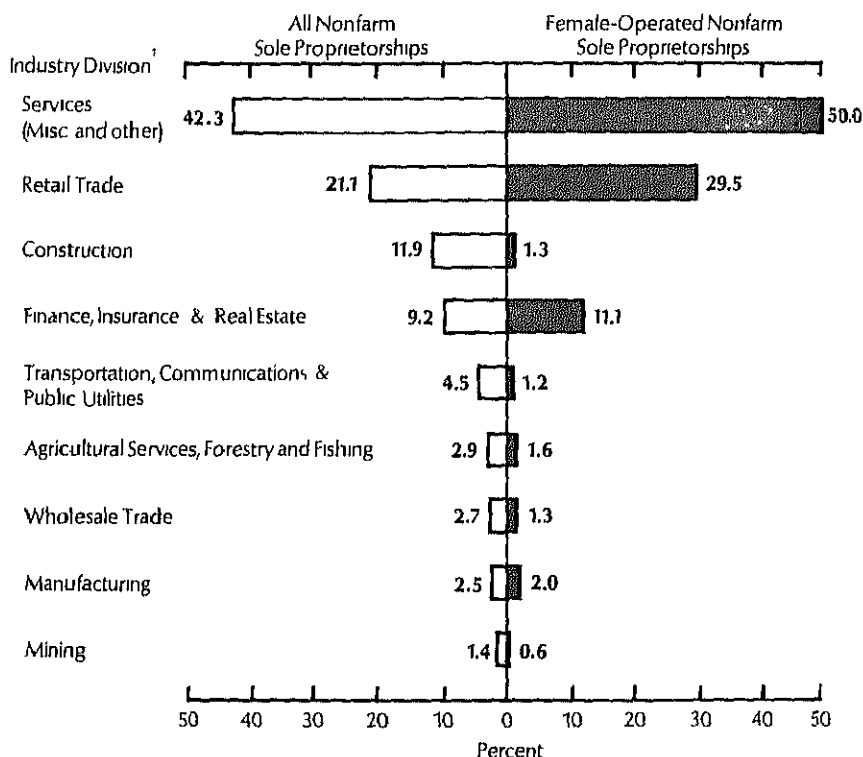
Women-owned businesses are strongly represented in the growing service sector. Combined, the miscellaneous and other services, retail trade; and finance, insurance, and real estate industries accounted for 91 percent of all female-operated and 73 percent of all IRS nonfarm sole proprietorships in 1982 (Chart 6.2).

The SBDB does not include as many miscellaneous service and finance, insurance, and real estate firms as the IRS business universe (Table 6.2).⁷ However, it substantiates the growing participation of female-operated

⁶There is no total count of female-operated businesses in the United States. The IRS has published data on female-operated sole proprietorships for 1977, 1979, and 1980 and prepared special tabulations for the SBA for 1981 and 1982. The SBA has estimated the total number of women-owned firms based on the IRS data and the Ownership Characteristics Survey of firms in the Master Establishment List of the Small Business Data Base (SBDB). For a more detailed definition of these separate data sources, see Table 6.1 and the appendix to this chapter.

⁷The SBDB includes fewer part-time and intermittent business activities that often are associated with real estate and miscellaneous services.

Chart 6.2 *Percent Distribution of All Nonfarm Sole Proprietorships and Female-Operated Nonfarm Sole Proprietorships by Industry Division, 1982*



¹Residual not allocable by industry.

Source: U.S. Department of the Treasury, Internal Revenue Service, special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

businesses in nontraditional industries such as agricultural services, mining, construction, manufacturing and transportation, communications, and public utilities.

Growth in the Number of Women-Owned Businesses

Women-owned firms are increasing more rapidly than the small business sector as a whole. From 1977 through 1982, the latest year of IRS estimates, the number of female-operated nonfarm sole proprietorships rose from 1.9 million to 2.65 million. This gain represented an annual rate of increase of 6.9 percent over the five-year period (Tables A6.16 and A6.17).

Female-operated firms made strong gains in their share of total U.S. nonfarm sole proprietorships, from 22.6 percent in 1977 to 26.2 percent in 1982. Shares of fe-

Table 6.2 *Number of Nonfarm Enterprises in the Small Business Data Base by Industry Division and Sex of Owner-Operator, 1984*

Industry Division	Thousands				Percent of Nonfarm Industries		Female-Operated As Percent of Industry
	Total	Male-Operated	Female-Operated	Male-Female Jointly Operated	Total	Female-Operated	
All Nonfarm ¹	5,825	3,961	551	1,313	100.0	100.0	9.5
Agricultural Services, Forestry, and Fishing	171	106	2	64	2.9	0.3	1.0
Mining	28	18	5	6	0.5	0.9	18.2
Construction	648	480	19	150	11.1	3.4	2.9
Manufacturing	445	359	26	60	7.6	4.8	5.9
Transportation, Communications & Public Utilities	187	111	23	54	3.2	4.2	12.2
Wholesale Trade	545	376	35	133	9.4	6.4	6.5
Retail Trade	1,617	1,017	188	412	27.8	34.1	11.6
Finance, Insurance & Real Estate	529	385	30	113	9.1	5.4	5.7
Services	1,653	1,109	223	321	28.4	40.5	13.5

¹Totals do not include some establishments that could not be classified by type of industry. Note: Estimates derived from a sample of the Small Business Data Base Master Establishment List (MEL) of more than 8.1 establishment and enterprise records. The MEL is created by matching two commercially available sources, the Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval, Inc. file, a "Yellow Pages" telephone listing. Percentages derived from unrounded data.

Source: Small Business Data Base, Ownership Characteristics Survey, 1984

male-operated firms also increased between 1977 and 1982 in all of the major industry divisions (Table 6.3).

Share of Business Receipts

For the five-year period 1977 to 1982, business receipts of female-operated nonfarm sole proprietorships increased from \$25.2 to \$41.7 billion or at an average annual rate of increase of 10.6 percent (Table A6.18).

Female-operated firms made modest improvements in their share of total business receipts, from 7.8 percent in 1977 to 9.6 percent in 1982, a gain of 1.8 percentage points (Table 6.4). The overall percentage point gain in numbers of firms was double that of receipts, however (Table 6.3). Within industry divisions, changes in the number of women-owned firms were not closely related to changes in their receipts; that is, increases in women-owned firms in an industry did not imply proportionate gains in sales.

Table 6.3 *Female-Operated Nonfarm Sole Proprietorships as a Percent of Total Nonfarm Sole Proprietorships by Industry Division, 1977, 1979, 1980, and 1982*

Industry Division	Percent of Industry Division Total				Change in Percentage Points
	1977	1979	1980	1982	1977-1982
All Nonfarm	22.6	25.1	26.1	26.2	3.6
Agricultural Services, Forestry and Fishing	7.9	9.4	10.0	14.3	6.4
Mining	8.6	11.3	9.2	11.2	2.6
Construction	1.6	1.9	1.9	2.9	1.3
Manufacturing	11.4	12.8	18.0	20.7	9.3
Transportation, Communications, Electric, Gas and Sanitary Services	6.1	6.4	6.3	6.9	0.8
Wholesale	8.9	10.1	10.3	12.8	3.9
Retail	31.9	34.8	36.7	36.8	4.9
Finance, Insurance & Real Estate	25.2	32.7	33.8	31.7	6.5
Services	28.4	30.5	31.2	31.0	2.6
Not Allocable by Industry	20.9	22.9	17.5	18.3	-2.6

Sources: U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8; *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 13, and special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

A number of factors affect this relationship. Many female nonfarm sole proprietorships are very small business operations and do not generate proportional changes in business receipts as their numbers increase. An IRS study in 1980 found that 73 percent of the female-operated firms had gross receipts under \$10,000 and 48 percent were in a gross receipts class under \$2,500. In comparison, 59 percent of all nonfarm sole proprietorships were in the under \$10,000 category and 33 percent in the less than \$2,500 class (Chart 6.3).⁸ The relation-

⁸Paul E. Grayson, "Male- and Female-Operated Nonfarm Proprietorships, Tax Year 1980," U.S. Department of the Treasury, Internal Revenue Service, *SOI Bulletin* (Washington, D.C.: U.S. Government Printing Office, Spring 1983), pp. 35-39, hereafter, "Nonfarm Proprietorships." Sole proprietorships are the most numerous and representative type of female-operated nonfarm businesses, but their receipts and net incomes may underestimate the averages for female-operated businesses. Generally, firms in the upper receipts and income size classes are corporations and partnerships. At this time, data on the financial characteristics of female-operated concerns are not available from the SBDB. The last source of this information was the Bureau of the Census survey of *Women-Owned Businesses*, 1977.

Table 6.4 *Business Receipts of Female-Operated Nontarm Sole Proprietorships as a Percent of Business Receipts of Total Nontarm Sole Proprietorships by Industry Division, 1977, 1979, 1980, and 1982*

Industry Division	Percent of Industry Division Total				Change in Percentage Points
	1977	1979	1980	1982	1977-1982
All Nonfarm	7.8	8.6	8.8	9.6	1.8
Agricultural Services, Forestry and Fishing	2.9	3.3	3.6	7.0	4.1
Mining	5.6	7.5	5.3	7.8	2.2
Construction	0.9	1.6	1.4	3.0	2.1
Manufacturing	4.9	6.0	5.7	10.7	5.8
Transportation, Communications, Electric, Gas and Sanitary Services	4.6	4.0	3.5	3.7	-0.9
Wholesale	4.1	3.4	4.9	2.8	-1.3
Retail	9.5	10.6	10.5	10.9	1.4
Finance, Insurance & Real Estate	11.7	17.2	16.9	13.7	2.0
Services	11.2	12.1	12.3	13.3	2.1
Not Allocable by Industry	13.0	9.1	5.2	4.6	-8.4

Source: U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8, *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 13, and special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

ship between shares of firms and receipts is also affected by several other variables: the number of firms and amount of receipts already in industry sectors in 1977, new starts from 1977 to 1982, and differences in the impact of the 1980 and 1981-1982 recessions on various industries.

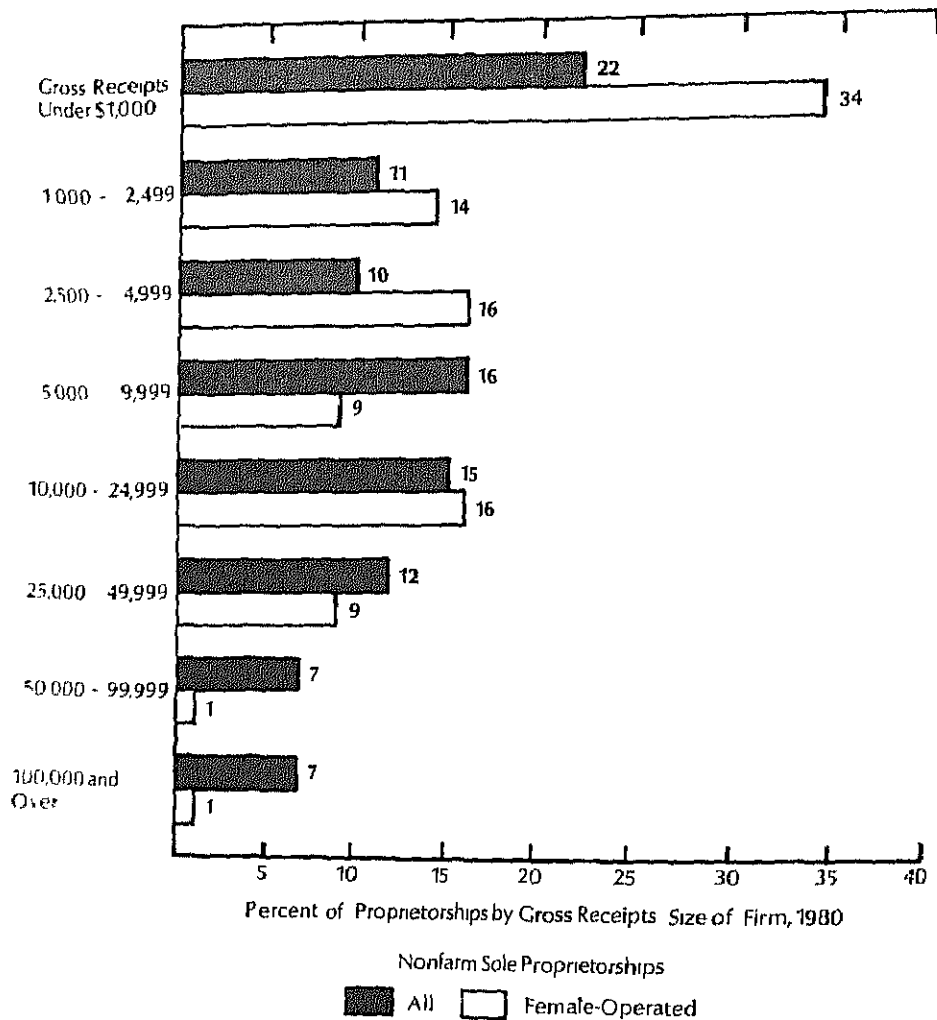
Changes in Net Income

Another measure of change in female-operated firms is net income, as published in IRS sole proprietorship returns. Net income of female-operated businesses increased from \$4.2 billion in 1977 to \$5.2 billion in 1982, an annual rate of increase of 4.1 percent.

From 1980 to 1982, the net income share of female-operated firms increased more slowly than their share of business receipts (Table 6.5).

The reasons for this slower growth in net income share are speculative but undoubtedly are related to the impact of the recession on female-operated firms. The recession halted growth in the income shares of these businesses from 1980 to 1982, as their shares of receipts continued to increase (Table 6.5). It also arrested the 1977-1979

Chart 6.3 *Distribution of All Nonfarm Sole Proprietorships and Female-Operated Nonfarm Sole Proprietorships by Gross Receipts Size of Firm, 1980*



Source: U.S. Department of the Treasury, Internal Revenue Service, *SOI Bulletin*, Spring 1983, p. 35.

progress in the average net income of female-operated firms (Table 6.6).

In 1980, thirty percent of the receipts of female-operated businesses were generated by the service industry. By 1982, services accounted for 34 percent (Table A6.18). The service industry also was not as adversely affected by

Table 6.5 *Number, Business Receipts, and Net Income of Female-Operated Nonfarm Sole Proprietorships as a Percent of Total Nonfarm Sole Proprietorships, 1977-1982*

	Percent of Total				Percentage Point Change	
	1977	1979	1980	1982	1977-1982	1980-1982
Number of Firms	22.6	25.1	26.1	26.2	3.6	0.1
Business Receipts	7.8	8.6	8.8	9.6	1.8	0.8
Net Income	8.6	10.3	10.1	10.2	1.6	0.1

Sources: Derived from U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8; *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 1.3, and special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

Table 6.6 *Changes in Average Net Income of Female-Operated, Male-Operated and All Nonfarm Sole Proprietorships, 1977, 1979, 1980, and 1982*

Year	Average Net Income (Dollars)			Female-Operated as Percent of Male-Operated	Two-Year Percent Change		
	All Nonfarm ¹	Male-Operated	Female-Operated		All Nonfarm	Male-Operated	Female-Operated
1982	5,005	6,330	1,956	30.9	-11.4 ¹	-11.3 ¹	-11.1 ¹
1980	5,647	7,139	2,200	30.8	—	—	—
1979	6,050	7,519	2,475	32.9	+ 3.0	+ 4.3	+ 11.1
1977	5,876	7,208	2,228	30.9	—	—	—

¹The relationship of these declines is not caused by modifications in the classification of sole proprietorships by the Internal Revenue Service in 1982.

Sources: Derived from U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8; *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 1.3, and special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

the recession as construction, manufacturing, and other industry sectors. The relative strength of the service industry would have sustained receipts of female-operated firms. However, other costs of operation that could not be fully passed through to consumers may have increased and affected the net income shares of female-operated firms.

Table 6.7 *Number of Female-Operated Nonfarm Sole Proprietorships in 68 Industry Classifications by Industry Division and Annual Rate of Growth or Decline, 1977-1982*

Industry Division	Total	Annual Rates of Growth or Decline				
		Less Than 0	0-9 9	10 0-19 9	20 0-29 9	30 0 and Over
All Nonfarm	68	7	28	17	12	4
Retail Trade	25	4	15	5	1	0
Services	22	3	8	6	4	1
Finance, Insurance & Real Estate	6	0	2	0	3	1
Manufacturing	4	0	0	2	2	0
Wholesale Trade	4	0	2	0	2	0
Agricultural Services, Forestry and Fishing	3	0	0	2	0	1
Construction	2	0	0	1	0	1
Transportation, Communications & Public Utilities	2	0	1	1	0	0

Note: Annual rates of growth or decline were computed for the most detailed level of the Statistics of Income classification system for which industry estimates were statistically reliable. As appropriate, the industry groupings were at 2-digit, 3-digit or 4-digit classification levels of the *Standard Industrial Classification Manual* as modified by the Internal Revenue Service to fit tax return information.

Sources: Derived from U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8, *idem*, special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

There are no appropriate data to study the effect of changes in the business cycle on sole proprietorships or the nonmanufacturing sector of the economy. Smaller manufacturers, however, often show deeper declines in profits during recession years than larger firms.⁹

Female-operated firms usually are smaller than other sole proprietorships, and a larger percentage of them are located in homes, which suggests that many are part-time operations.¹⁰ Because of this, small female-operated nonfarm sole proprietorships also may have been at a competitive disadvantage in obtaining credit. These small firms would have felt the impact of high interest rates as they met short-term financial requirements.

⁹Meir Tamari, "The Effect of Changes in the Business Cycle on Small Firms," an unpublished study conducted for the Small Business Administration, 1981.

¹⁰Grayson, "Nonfarm Proprietorships."

**Growth of
Women-Owned
Businesses in
Specific
Industries**

The picture of 1977–1982 growth and decline in the shares of female-operated sole proprietorships and receipts indicates that women are moving into nontraditional ventures while continuing to enter traditional services (Tables A6.17 and A6.19). Services was the only industry division of traditional women-owned business activity with above-average growth rates from 1977 to 1982. Here the magnitude of increase in firms and receipts produced high gains for both female-operated and all nonfarm sole proprietorships.

While many businesses operated by women entrepreneurs are in traditionally female-dominated occupations, women are also broadening their participation in nontraditional fields. From 1977 to 1982, the highest annual growth rates of female-operated businesses occurred in nontraditional, limited areas of women's business ownership where a small degree of change generated large percentage changes in numbers of firms and business receipts. These industries included agricultural services, forestry, and fishing; mining; construction; and manufacturing. In these major industry divisions, the growth rate of female-operated businesses exceeded the growth rate of the industry as a whole.

To determine the importance of the 1977–1982 growth in female-operated firms, tests were made to determine whether changes in the number of firms were statistically significant. The tests showed that increases were significant for all major industry divisions except wholesale trade and transportation, communications, and public utilities.¹¹

Sixty-eight industry sub-categories were then classified by annual rates of growth or decline in women-owned firms between 1977 and 1982. Half had growth rates over 9.8 percent. The low and high values of change were –18.5 to 78.3 percent. Forty-seven of the 68 industries (69 percent) were in retail trade or services, but the patterns of change in the two categories were different. More of the service industries showed high growth rates, while most of the retail trade industries grew slowly or declined (Table 6.7).

Industries that grew 10 percent or more annually and registered statistically significant change in numbers included areas of projected employment growth, such as business, professional and health services, construction,

¹¹A change was considered to be significant if there were fewer than 5 chances in 100 that it could have occurred because of sampling fluctuations alone.

Table 6.8 *Female-Operated Businesses with Annual Growth Rates of 10 Percent or More and Significant Change, 1977-1982*

Type of Business	Annual Rates of Growth (Percent)
Business Services	22.3
Management and Public Relations	18.3
Services to Buildings	
Medical and Health Services	12.0
Miscellaneous Medical and Health Services	17.9
Nursing and Personal Care Facilities	
Professional Services	27.1
Legal Services	15.5
Accounting, Auditing, and Bookkeeping	
Finance, Insurance and Real Estate	78.3
Security Brokers and Dealers	21.9
Commodity Contract Brokers and Exchange Services	21.0
Insurance Agents, Brokers and Services	
Manufacturing	23.9
Apparel and Other Textile Production	
Construction	39.3
General Building Contractors	
Agricultural Services	13.6
Animal Services Except Livestock	

Note: Z value was significant outside the range of -1.96 to +1.96 or .05 level of significance; i.e., there were less than 5 chances in 100 that the change in the number of firms could have occurred because of sampling fluctuations alone.

Sources: Derived for U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8, *idem*, special tabulation, Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

and finance, insurance and real estate (Table 6.8). Examples of female-operated businesses with annual growth rates of 10 percent or more that showed substantial but not significant change from 1977 to 1982 were landscape and horticultural services; painting, paper hanging and decorating; printing and publishing; passenger transportation arrangement, lessors other than buildings; engineering and architectural services; livestock breeding; equipment rental and leasing; and computer and data processing.

Female-operated businesses with 1977-1982 annual growth rates under 10 percent and without significant change in numbers represented a wide sampling of in-

dustries. local and long distance trucking, direct selling organizations; real estate agents and managers, producers, orchestras and recreational services, offices of physicians; auto repair services; and educational services. Mail order houses and miscellaneous wholesaling activities were in the less-than-10-percent growth category but registered significant change.

Declining areas of women's business ownership represented industries affected principally by recent economic conditions, such as family clothing stores; jewelry stores; gifts, novelty and souvenir shops; motels and tourists courts, and grocery stores.

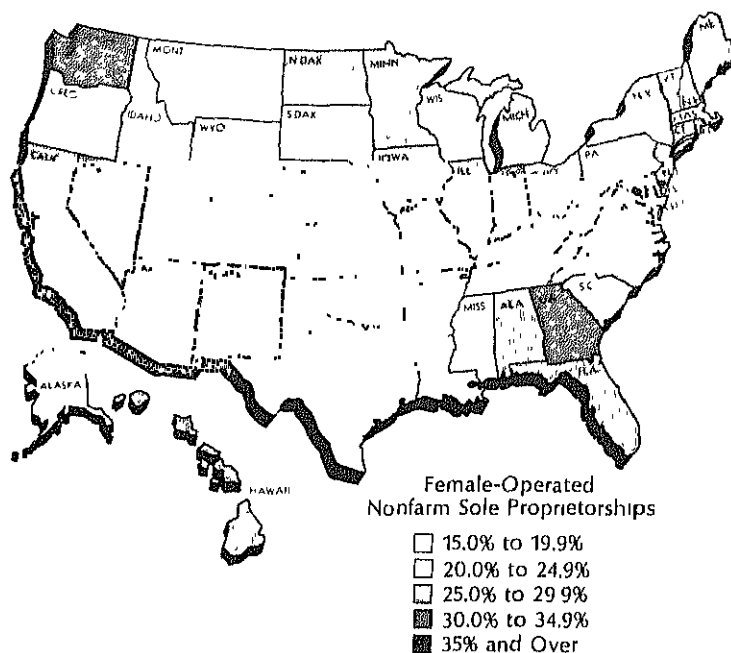
Geographic Distribution of Female-Operated Firms

Female-operated firms are distributed geographically in much the same pattern as other businesses (Table A6.20). California, Texas, New York, Illinois, and Florida accounted for approximately 37 percent of the U.S. total of female-operated and all nonfarm sole proprietorships in 1982. The geographic distributions of the two groups for the remainder of the states also were similar.

The state distributions of business receipts for female-operated firms did not follow the overall pattern as closely, but there was still a high degree of geographic similarity (Table A6.21). Again, California far outranked any other state in percentage of small business receipts and also accounted for a slightly higher percentage of the receipts of female-operated firms than of all nonfarm proprietorships. The reverse prevailed in Texas, the second-ranking state in percentage of business receipts. There, the ratio of female-operated receipts was less than the Texas percentage for all nonfarm sole proprietorships.

More telling differences appear when the distribution of female-operated and all sole proprietorships is examined state-by-state. Female-operated firms tend to be better represented in areas of high population, income, or employment, such as California, the District of Columbia, and New York. They are not as well represented in sparsely populated and rural areas, such as Alaska, Idaho, and Wyoming. The ratio of female-operated businesses also is affected by low or high concentrations of businesses in which women do not participate actively, such as manufacturing and mining. In locations such as the District of Columbia, the presence of large numbers of women with professional backgrounds and wage-and salary experience, which can be translated into management and business talent, may have a positive impact on the representation of female-operated businesses.

Chart 6.4 *Percent of Nonfarm Sole Proprietorships Operated by Females Within States, 1982*

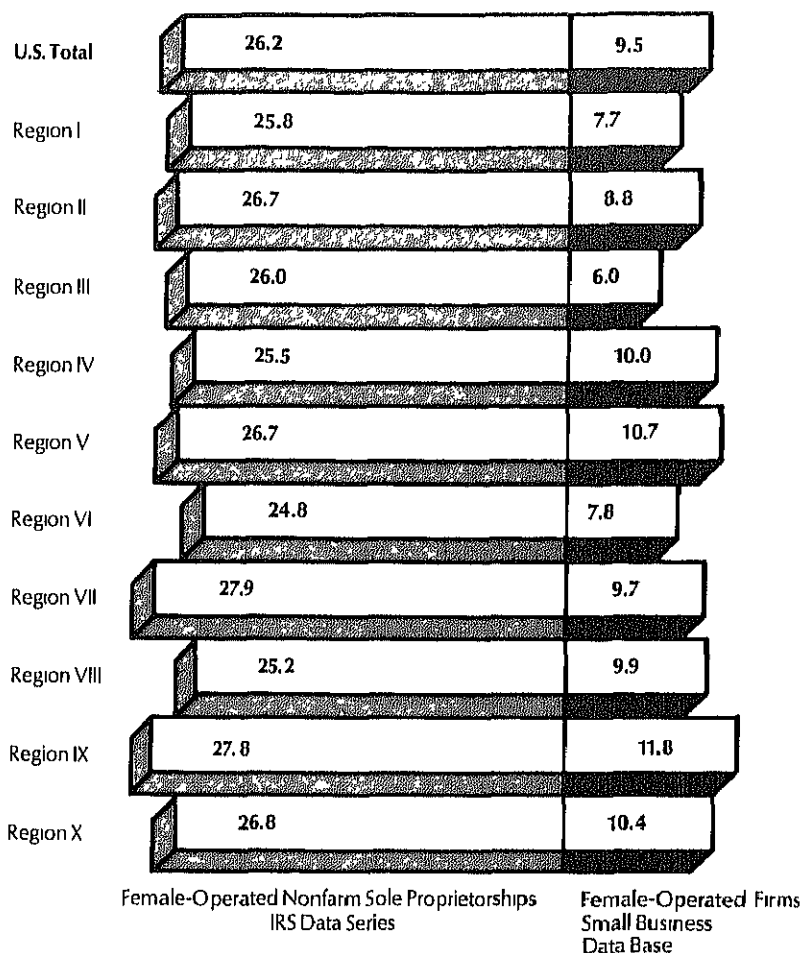


Note: The state distribution of female-operated firms published in the *State of Small Business, 1984* included farms.

Source: U.S. Department of the Treasury, Internal Revenue Service, special tabulation Table K-3, "Nonfarm Sole Proprietorship Businesses: Business Receipts and Net Income by Sex of Proprietor, Major Industry, and State," 1982.

Within states, the shares of female-operated firms ranged from 16.8 percent in Tennessee to 45.9 percent in the District of Columbia, with a U.S. average of 26.2 percent (Chart 6.4). In 25 states, 25 to 29.9 percent of the nonfarm sole proprietorships were female-operated. In the District of Columbia and seven states, female-operated firms represented 30 percent or more of all the nonfarm sole proprietorships. By rank, beginning with the highest percentage, these areas were the District of Columbia, Delaware, Washington, Nevada, Missouri, Georgia, Indiana, and New Mexico. In the District of Columbia and Delaware, the principal areas of female-operated business were services and finance, insurance and real estate. In the other five states, the largest con-

Chart 6.5 *Female-Operated Nonfarm Sole Proprietorships as a Percent of All Nonfarm Sole Proprietorships, 1982, and Female-Operated Firms as a Percent of All Firms, 1984*



Note: The percentages of all nonfarm sole proprietorships operated by females in 1982 were calculated using IRS data series for 1982. The percentages of all firms operated by females in 1984 were calculated using data from the Small Business Data Base for 1984.

Source: Small Business Data Base, Ownership Characteristics Survey, 1984, and the U.S. Department of the Treasury, Internal Revenue Service, special tabulation Table 9A, 1982, unpublished data.

Table 6.11 *Department of Defense Prime Contract Actions Over \$10,000 to Small Business and Women-Owned Business, FY 1982–FY 1983*

	DOD Contract Actions over \$10,000 (Thousands of Dollars)		Share of DOD Actions (Percent)		Percent Change FY 1982 to FY 1983
	FY 1982	FY 1983	FY 1982	FY 1983	
Total	121,232,448	123,300,980	100.0	100.0	1.7
Small Business Actions	18,267,432	16,372,026	15.1	13.3	-10.4
Women-Owned Business Actions	332,974	375,837	0.3	0.3	12.9

Source: Federal Procurement Data Center, Special Report 1226A, July 25, 1984

business share—0.3 percent of total agency awards in both FYs 1982 and 1983—represented a dollar increase of almost 13 percent (Table 6.11). The other eight principal sources of federal prime contract awards to women-owned businesses—by 1983 rank of importance—were the Departments of Transportation and Agriculture, the Veterans Administration, the Departments of Health and Human Services and Interior, the National Aeronautics and Space Administration, the Department of Labor, and the General Services Administration.

*Prime Contract
Actions of
\$10,000 and
Over by State*

In FYs 1982 and 1983, women-owned businesses in eight geographic areas received prime contracts totaling over \$20 million in at least one of the two fiscal years (Table A6.25). Combined, dollar awards to California, Texas, New York, Virginia, the District of Columbia, Maryland, Ohio, and Michigan represented 56 percent of the FY 1982 and 45 percent of FY 1983 total of awards. California and Texas, the 1983 leaders in number of female-operated nonfarm sole proprietorships and business receipts, also were the top-ranking recipients of prime contract actions over \$10,000 awarded to women-owned businesses. California received 10 percent and Texas, 6 percent. In FY 1982, these states ranked second and third, respectively, to New York.

Three other states with significant representation in federal procurement in both fiscal years were Virginia, Maryland, and the District of Columbia. Above-average representation of these states may be related to a heavy concentration of women-owned businesses and profes-

sional women in the Washington, D C metropolitan area.

Conclusion

The recent history of women-owned business is a record of growth and change. Long-term social, economic, and technological shifts have caused a fundamental change in employment from predominantly large manufacturing industries to service-oriented industries. Small businesses are the leading job generators in this new entrepreneurial economy, and women entrepreneurs are well positioned to capitalize on the trend. Many women have life and work experiences that are well adapted to the service orientation of the marketplace. Others are achieving higher levels of education in fields such as engineering, and are sharpening skills needed to open businesses in highly technical and nontraditional industries.

Women are opening businesses in record numbers. Sole proprietorships, partnerships, and corporations owned by women reached the 3 million mark in 1984. Employment in women-owned businesses grew particularly in the service, retail trade and finance, insurance and real estate industries. Women's entrepreneurship has increased significantly in a number of nontraditional industries, such as construction, building services, legal services, and securities brokers and dealers.

There is considerable room for growth. Many women-owned firms are very small and their receipts have not kept pace with the increasing number of firms. The 1980-1982 recession took a toll on recent gains made by women-owned firms in receipts and net income. The current economic expansion should help to improve this situation.

Women in business are riding a wave of opportunity. Their experience and education are preparing them more than ever for entrepreneurship. Their newness to business will increase their ability to innovate in bringing products and services to the marketplace. Like other small firms, women-owned businesses are well adapted to the new entrepreneurial economy.

of the total number of women-owned nonfarm businesses in the United States based on the last estimate of the IRS for female-operated nonfarm sole proprietorships and data derived from an Ownership Characteristics Survey of firms in the Master Establishment List (MEL) of the Small Business Data Base (SBDB). As the SBDB does not include numerous part-time and intermittent business activities that are represented in the IRS sole proprietorship data, the SBA survey underestimates the total number of sole proprietorships in the United States. A description of MEL is given in Appendix D of this publication.

The definitions of women-owned businesses used by the SBA and female-operated businesses of IRS are different. In the SBA Ownership Characteristics Survey, a business was classified as women-owned if 51 percent or more of the firm was owned by women.

The procedure used by the IRS for classifying a business as a female-operated firm is as follows: the gender of the proprietor is inferred by the U.S. Department of the Treasury, Internal Revenue Service, from the name of the proprietor on Schedule C (Form 1040), Profit or (Loss) from Business or Profession.

If the gender cannot be determined readily from Schedule C, the name and occupation boxes on page 1 of Form 1040 provide sources to make a determination. In addition, Schedule SE (Form 1040), Computation of Social Security Tax, which provides the name of the self-employed person, is reviewed to help make the determination. In those cases where there are two Schedule SEs filed—one for the wife and one for the husband, which is an indication of dual management and control of the business—the business is classified as male and female jointly operated.

In cases where there is only Schedule SE filed, the relationship between data on the Schedule SE and the Schedule C is used to determine whether the business should be classified as male-operated or female-operated. The 1982 industry tabulations for sole proprietorships including female-operated firms, are not entirely comparable with data for previous years although state detail is. In 1982 multiple schedules attached to a single tax return were classified into the one industrial activity that predominated. This procedure tended to bias the 1982 estimate of female-operated firms upward in areas of their dominance and downward in areas of dominance by male-operated firms.

Year	Sole Proprietorships (Thousands)		Resident Population of Entrepreneurial Age (Thousands)		Sole Proprietors Per 1,000 Persons of Entrepreneurial Age (Number)	
	Total	Female- Operated	Total	Female	Total	Female
1982	11,170 ¹	2,942 ¹	176,755	92,258	63	32
1981	10,545	2,780	174,496	91,092	60	31
1980	9,730	2,535	171,954	89,794	57	28
1979	9,344	2,341	168,953	88,238	55	27
1978	8,908	NA	165,932	86,659	54	—
1977	8,414	1,901	162,898	85,056	52	22

Note: NA = Not Available.

¹The number of sole proprietorships in this table exceeds the number for 1982 in industry tables of the text. The Internal Revenue Service used a count of tax returns rather than business activities for the industry detail to improve estimates of business receipts and net income of sole proprietorships.

Source: U.S. Department of Commerce, Bureau of the Census, *Preliminary Estimates of the Population of the United States by Age, Sex and Race: 1970 to 1981* (Washington, D.C.: Government Printing Office, 1982), Table 2; *idem*, *Estimates of the Population of the United States by Age, Sex and Race, 1980 to 1983* (Washington, D.C.: Government Printing Office, 1984), Table 2; and U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8, *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 1.3; special tabulation Table K-3, "Nonfarm Sole Proprietorship Businesses: Business Receipts and Net Income by Sex of Proprietor, Major Industry and by State, Tax Year 1981"; and *idem*, "Tax Year 1982."

Table A6.13 *Female Civilian Labor Force 16 Years and Over as a Percent of the Total Female Population, 1972-1982*

Year	Percent	Year	Percent
1972	43.7	1978	49.2
1973	44.2	1979	50.8
1974	45.3	1980	51.1
1975	46.0	1981	52.0
1976	46.8	1982	52.1
1977	48.0		

Source: U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1984* (Washington, D.C.: Government Printing Office, 1983), Table No. 683, p. 413.

Occupation, 1972 and 1982

Occupation	1972		1982	
	Total Employed (Thousands)	Percent Female	Total Employed (Thousands)	Percent Female
Total	82,153	38.0	99,526	43.5
Professional, Technical, and Kindred Workers¹	11,538	39.3	16,951	45.1
Accountants	720	21.7	1,193	38.6
Computer Specialists	276	16.8	751	28.5
Engineers ¹	1,111	8	1,574	5.7
Civil	156	.6	199	2.5
Electrical and Electronic	289	.7	404	4.0
Industrial	171	2.4	260	14.2
Mechanical	192	—	240	2.9
Lawyers and Judges	322	3.8	630	15.4
Librarians, Archivists, and Curators	158	81.6	207	80.7
Life and Physical Scientists	232	10.0	320	20.6
Personnel and Labor Relations Workers	312	31.0	423	49.6
Physicians, Dentists, and Related Practitioners ¹	630	9.3	869	14.6
Dentists	108	1.9	121	3.3
Pharmacists	127	12.7	168	23.8
Physicians, Medical and Osteopathic	332	10.1	486	14.8
Registered Nurses, Dietitians, and Therapists	956	92.6	1,736	91.8
Registered Nurses	807	97.6	1,415	95.6
Therapists	117	59.1	252	70.6
Health Technologists and Technicians	319	69.5	657	72.9
Religious Workers	293	11.0	347	13.8
Social Scientists	143	21.3	345	38.0
Social and Recreation Workers	356	55.1	496	65.5
Teachers, College and University	464	28.0	601	35.4
Teachers, Except College and University ¹	2,852	70.0	3,266	70.7
Elementary	1,256	85.1	1,434	82.4
Pre-kindergarten and Kindergarten	189	96.8	271	98.5
Secondary	1,118	49.6	1,231	51.9
Engineering and Science Technicians ¹	835	9.1	1,114	18.3
Drafters	288	6.3	304	18.4
Electrical and Electronic Engineering Technicians	166	5.5	314	12.4
Technicians, Except Health, Engineering, and Science	153	11.2	214	22.9
Vocational and Educational Counselors	134	50.0	164	51.8
Writers, Artists, and Entertainers	903	31.7	1,399	42.9

Occupation	1972		1982	
	Total Employed (Thousands)	Percent Female	Total Employed (Thousands)	Percent Female
Managers and Administrators, Except Farm¹	8,081	17.6	11,493	28.0
Bank Officers and Financial Managers	430	19.0	731	37.1
Buyers, Wholesale and Retail Trade	162	32.9	195	43.1
Health Administrators	119	46.6	228	50.9
Managers and Superintendents, Building Officials and Administrators, Public Administration, n.e.c.	137	42.6	183	52.5
Purchasing Agents and Buyers, n.e.c.	311	20.4	430	29.3
Restaurant, Cafeteria, and Bar Managers	366	21.2	474	35.7
Sales Managers	498	32.4	768	40.6
School Administrators	574	15.7	725	25.9
	304	26.0	423	36.2
Sales Workers¹	5,383	41.6	6,580	45.4
Insurance Agents, Brokers, and Underwriters	443	11.6	645	26.2
Real Estate Agents and Brokers	352	36.7	534	50.2
Stock and Bond Sales Agents	102	9.9	197	19.8
Sales Representatives, Manufacturing Industries	401	6.8	383	21.4
Sales Representatives, Wholesale Trade	700	4.7	1,020	13.9
Sales Clerks, Retail Trade	2,359	68.9	2,447	70.0
Salesworkers, Except Clerks, Retail Trade	432	13.0	522	19.2
Salesworkers, Services and Construction	137	29.4	268	42.5
Clerical and Kindred Workers¹	14,329	75.6	18,446	80.7
Bank Tellers	290	87.5	561	92.0
Bookkeepers	1,592	87.9	1,968	91.8
Cashiers	998	86.6	1,683	86.8
Counter Clerks, Except Food	331	73.9	373	76.4
Estimators and Investigators, n.e.c.	350	43.4	570	58.4
Insurance Adjusters, Examiners, and Investigators	109	34.3	200	56.5
Office Machine Operators ¹	679	71.4	1,107	74.6
Computer and Peripheral Equipment Operators	199	37.8	588	63.3
Key Punch Operators	284	89.8	364	94.5
Receptionists	439	97.0	672	97.5
Secretaries	2,964	99.1	3,847	99.2
Shipping and Receiving Clerks	453	14.9	499	24.8
Statistical Clerks	301	70.9	365	81.6
Stock Clerks and Storekeepers	513	22.9	497	36.8
Telephone Operators	394	96.7	283	91.9
Typists	1,025	96.1	942	96.6

Occupation	1972		1982	
	Total Employed (Thousands)	Percent Female	Total Employed (Thousands)	Percent Female
Craft and Kindred Workers¹	10,867	3.6	12,272	7.0
Carpenters	1,052	.5	1,082	1.7
Brickmasons and Stonemasons	176	—	145	.7
Electricians	498	.6	628	1.6
Excavating, Grading, and Road Machine Operators	428	—	399	1.3
Painters, Construction and Maintenance	430	1.9	473	5.5
Plumbers and Pipe Fitters	391	—	482	.8
Blue-collar Worker Supervisors, n.e.c.	1,419	6.9	1,688	12.1
Machinists and Jobsetters	473	.6	589	3.1
Metalcraft Workers ¹	625	1.9	579	3.8
Mechanics, Automobile	1,040	.5	1,236	1.0
Mechanics, Except Automobile ¹	1,746	1.0	2,122	2.6
Air Conditioning, Heating, and Refrigeration Aircraft	175	—	217	—
Heavy Equipment Including Diesel	124	—	130	3.8
Printing Craftworkers ¹	719	.7	946	1.5
Compositors and Typesetters	398	14.9	454	28.2
Printing Press Operators	171	17.1	192	38.0
Bakers	142	4.9	183	12.6
Crane, Derrick, and Hoist Operators	115	28.9	157	47.8
Electric Power Line and Cable Operators	150	1.3	120	.8
Stationary Engineers	102	—	110	.9
Telephone Installers and Repairs	191	1.1	193	2.1
	312	1.9	304	10.9
Operatives, Except Transport¹	10,388	38.6	9,429	40.7
Assemblers	1,022	46.8	1,087	53.8
Checkers, Examiners, and Inspectors, Manufacturing	688	48.5	729	53.9
Garage Workers and Gas Station Attendants	504	4.6	320	5.3
Laundry and Dry Cleaning Operatives, n.e.c.	166	69.7	188	66.5
Meat Cutters and Butchers, Except Manufacturing	202	3.5	183	6.6
Mine Operatives	144	.7	222	1.4
Packers and Wrappers, exc. Meat and Produce	649	61.1	582	60.8
Painters Manufactured Articles	179	14.6	139	15.8
Precision Machine Operatives	390	10.0	275	12.4
Sewers and Stitchers	942	95.8	735	95.4
Textile Operatives	426	55.2	270	63.0
Welders and Flame Cutters	558	3.6	602	4.8
Transport Equipment Operatives¹	3,223	4.2	3,377	8.9
Bus Drivers	253	34.1	354	46.6
Delivery and Route Workers	895	2.5	574	9.6
Taxicab Drivers and Chauffeurs	167	9.0	152	9.9
Truck Drivers	1,449	.6	1,841	2.1

Occupation	1972		1982	
	Total Employed (Thousands)	Percent Female	Total Employed (Thousands)	Percent Female
Laborers, Except Farm¹	4,242	6.0	4,518	11.7
Construction Laborers, Including Carpenters' Helpers	948	5	786	3.2
Freight and Material Handlers	765	5.9	696	9.8
Gardeners and Groundskeepers, Except Farm	548	2.2	722	5.0
Stockhandlers	728	16.9	972	24.5
Farmers and Farm Managers	1,690	5.9	1,452	11.8
Farm Laborers and Supervisors¹	1,386	32.1	1,271	24.1
Farm Laborers, Wage Workers	892	15.3	987	15.4
Farm Laborers, Unpaid Family Workers	455	66.8	244	61.9
Service Workers, Except Private Household	9,584	57.0	12,694	59.0
Cleaning Service Workers	2,084	32.8	2,515	38.3
Food Service Workers	3,286	69.8	4,760	65.7
Health Service Workers ¹	1,513	87.0	2,022	89.7
Health Aides, Except Nursing, and Trainees	158	79.6	333	86.2
Nursing Aides, Orderlies, and Attendants	915	83.4	1,136	87.1
Practical Nurses	345	96.5	400	97.0
Personal Service Workers¹	1,551	71.5	1,850	76.9
Child Care Workers, Except Private Household	358	95.8	472	96.2
Handdressers and Cosmetologists	501	91.2	573	89.5
Protective Service Workers¹	1,150	5.7	1,546	10.9
Firefighters	201	.5	218	5
Guards	415	4.6	685	12.7
Police and Detectives	418	2.6	505	6.7
Private Household Workers¹	1,442	97.6	1,042	96.9
Child Care Workers	545	98.0	469	97.4
Cleaners and Servants	715	97.2	439	95.9

¹Includes occupations not shown separately.

Note: " " represents zero or rounds to zero.

Source: U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 1984 (Washington, D.C.: Government Printing Office, 1983), Table No. 696, pp. 419-420.

Table A6.15 Characteristics of Self-Employed Workers by Level of Educational Attainment and Sex, 1980

	Female					Male				
	Number (Thousands)	Percent	Female Average Age	Average Self- Employment Income (Dollars)	Average Wage- and-Salary Income (Dollars)	Number (Thousands)	Percent	Male Average Age	Average Self- Employment Income (Dollars)	Average Wage- and-Salary Income (Dollars)
Total Self-Employed	2,453	100.0	43	3,874	5,938	7,811	100.0	41	10,950	13,344
Less than High School	548	22.3	48	3,129	3,983	2,155	27.6	45	7,506	8,761
High School Graduate	886	36.1	42	3,469	6,231	2,184	28.0	39	10,435	13,761
Started but did not Complete College	601	24.5	36	4,064	6,373	1,518	19.4	35	9,763	13,271
Completed 4 Years of College	225	9.2	41	4,383	8,961	818	10.5	41	12,420	21,581
Completed More Than 4 Years of College	193	7.9	40	6,666	9,897	1,136	14.5	41	19,003	21,801

Source: Unpublished tabulation of self-employment figures for males and females derived from the 1980 Census of Population 1/1,000 sample.

Table A6.16 Total Nonfarm Sole Proprietorships and Female-Operated Nonfarm Sole Proprietorships by Industry Division, 1977, 1979, 1980 and 1982 (Thousands)

Industry Division	Total Nonfarm Sole Proprietorships			Female-Operated Nonfarm Sole Proprietorships		
	1977	1979	1980	1977	1979	1980
All Nonfarm	8,413.8	9,343.6	9,730.0	1,900.7	2,341.4	2,535.2
Agricultural Services, Forestry and Fishing	245.4	276.2	307.7	19.5	26.1	30.8
Mining	71.2	97.5	119.8	6.1	11.0	11.0
Construction	994.1	1,097.4	1,073.3	16.1	21.1	19.9
Manufacturing	224.1	235.5	296.2	25.5	30.2	53.3
Transportation, Communications, Electric, Gas and Sanitary Services	385.3	415.5	438.8	23.6	26.4	27.7
Wholesale and Retail Trade	2,264.8	2,454.7	2,527.1	641.1	753.4	824.8
Wholesale	307.2	314.7	329.8	27.2	31.7	34.0
Retail	1,862.4	1,985.8	2,066.3	594.4	691.2	759.0
Unallocated	95.2	154.2	131.1	19.5	30.5	31.8
Finance, Insurance & Real Estate	894.9	1,057.7	1,049.0	225.6	346.0	354.8
Services	3,302.5	3,654.0	3,842.8	936.6	1,114.6	1,199.7
Not Allocable by Industry	31.4	55.0	75.4	6.6	12.6	13.2
			81.5			14

Note. Detail may not add to total because of rounding.

Sources. U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C. Government Printing Office, 1981), Table 1.8; *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C. Government Printing Office, 1982), Table 1.3, and special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

Proprietorships and Female-Operated Nonfarm Sole Proprietorships by Industry Division, 1977-1982

Industry Division	Female-Operated	Rank	Total Nonfarm	Rank
All Nonfarm	6.9		3.7	
Mining	20.6	1	14.2	1
Agricultural Services, Forestry, and Fishing	18.9	2	3.7	4
Construction	16.5	3	3.9	3
Manufacturing	15.2	4	2.2	7
Services	7.2	5	5.3	2
Transportation, Communications, Electric, Gas and Sanitary Services	5.7	6	3.2	5
Retail Trade	5.7	6	2.7	6
Wholesale Trade	5.5	8	-2.1	9
Finance, Insurance & Real Estate	5.4	9	0.7	8

Source: Based on U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8; *idem*, special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

Industry Division	Business Receipts (Millions of Dollars)			Annual Percent Growth ¹	Percent of Female-Operated Total		
	1977	1980	1982		1977	1980	1982
Female-Operated Nonfarm Total	25,176	36,377	41,717	10.6	100.0	100.0	100.0
Agricultural Services, Forestry and Fishing	153	234	605	31.6	0.6	0.6	1.4
Mining	259	454	917	28.8	1.0	1.2	2.2
Construction	383	682	1,470	30.9	1.5	1.9	3.3
Manufacturing	487	842	1,071	17.1	1.9	2.3	2.3
Transportation, Communications, Electric, Gas, and Sanitary Services	643	698	834	5.3	2.6	1.9	2.0
Wholesale and Retail Trade	13,373	18,938	19,014	7.3	53.1	52.1	45.5
Wholesale	1,378	2,077	937	-7.4	5.5	5.7	2.2
Retail	11,752	16,209	17,463	8.2	46.6	44.6	41.0
Unallocated	243	652	614	-	1.0	1.8	1.5
Finance, Insurance & Real Estate	2,258	3,640	3,340	8.2	9.0	10.0	8.0
Services	7,570	10,796	14,359	13.7	30.1	29.7	34.4
Not Allocable by Industry	50	93	108	-	0.2	0.3	0.3

¹Compound growth rate

Note: Detail may not add to total because of rounding

Source: U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1-8; *idem*, *1979-1980 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1982), Table 13, and special tabulation, Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982

Proprietorships and Female-Operated Nonfarm Sole Proprietorships by Industry Division, 1977-1982

Industry Division	Female-Operated	Rank	Total Nonfarm	Rank
All Nonfarm	10.6		6.0	
Agricultural Services, Forestry and Fishing	31.6	1	10.6	2
Construction	30.9	2	2.8	7
Mining	28.8	3	20.8	1
Manufacturing	17.1	4	1.8	8
Services	13.7	5	9.8	4
Retail Trade	8.2	6	5.2	5
Finance, Insurance & Real Estate	8.2	6	4.7	6
Transportation, Communications, Electric, Gas, and Sanitary Services	5.3	8	10.3	3
Wholesale Trade	-7.4	9	0.1	9

Source. Based on U.S. Department of the Treasury, Internal Revenue Service, *1977 Sole Proprietorship Returns* (Washington, D.C.: Government Printing Office, 1981), Table 1.8; *idem*, special tabulation Table 9A, "Nonfarm Sole Proprietorships: Business Receipts and Net Income by Sex of Proprietor and Industry," 1982.

Sole Proprietorships by SBA Region and State, 1982

Region/State	All Nonfarm	Female- Operated	U.S. Total (Percent)		State (Percent)
	(Thousands)		All Nonfarm	Female- Operated	Female- Operated
U.S. Total Nonfarm	11,170.2¹	2,942.4²	100.0	100.0	26.2
Region I, Total	564.1	145.5	5.1	4.9	25.8
Connecticut	141.7	40.6	1.3	1.4	28.7
Maine	60.2	16.5	0.5	0.6	27.4
Massachusetts	223.0	52.5	2.0	1.8	23.6
New Hampshire	60.4	16.7	0.5	0.6	27.6
Rhode Island	45.5	11.5	0.4	0.4	25.2
Vermont	33.3	7.7	0.3	0.3	23.2
Region II, Total	911.4	243.2	8.2	8.3	26.7
New Jersey	249.4	58.4	2.2	2.0	23.4
New York	662.0	184.8	5.9	6.3	27.9
Region III, Total	959.9	249.6	8.6	8.5	26.0
Delaware	27.3	8.7	0.2	0.3	31.9
District of Columbia	23.6	10.8	0.2	0.4	45.9
Maryland	186.3	51.4	1.7	1.7	27.6
Pennsylvania	432.6	96.3	3.9	3.3	22.3
Virginia	233.7	66.9	2.1	2.3	28.6
West Virginia	56.4	15.5	0.5	0.5	27.5
Region IV, Total	1,644.0	418.7	14.7	14.2	25.5
Alabama	145.7	37.4	1.3	1.3	25.7
Florida	510.0	134.9	4.6	4.6	26.5
Georgia	202.4	61.5	1.8	2.1	30.4
Kentucky	156.3	39.1	1.4	1.3	25.0
Mississippi	92.2	19.4	0.8	0.7	21.1
North Carolina	247.0	70.2	2.2	2.4	28.4
South Carolina	110.1	26.0	1.0	0.9	23.6
Tennessee	180.3	30.2	1.6	1.0	16.8
Region V, Total	1,968.9	526.0	17.6	17.9	26.7
Illinois	503.4	128.6	4.5	4.4	25.6
Indiana	241.0	73.0	2.2	2.5	30.3
Michigan	353.3	102.8	3.2	3.5	29.1
Minnesota	247.1	67.5	2.2	2.3	27.3
Ohio	432.8	108.5	3.9	3.7	25.1
Wisconsin	191.3	45.6	1.7	1.5	23.9

Sole Proprietorships by SBA Region and State, 1982—Continued

Region/State	All Nonfarm (Thousands)	Female- Operated	U.S. Total (Percent)		State (Percent)
			All Nonfarm	Female- Operated	Female- Operated
Region VI, Total	1,521.3	377.2	13.6	12.8	24.8
Arkansas	124.8	27.5	1.1	0.9	22.0
Louisiana	170.3	41.6	1.5	1.4	24.4
New Mexico	68.6	20.6	0.6	0.7	30.0
Oklahoma	241.4	64.7	2.2	2.2	26.8
Texas	916.2	222.8	8.2	7.6	24.3
Region VII, Total	726.9	202.8	6.5	6.9	27.9
Iowa	167.3	42.0	1.5	1.4	25.1
Kansas	179.1	45.5	1.6	1.5	25.4
Missouri	281.7	86.0	2.5	2.9	30.5
Nebraska	98.8	29.3	0.9	1.0	29.6
Region VIII, Total	458.9	115.5	4.1	3.9	25.2
Colorado	196.5	54.8	1.8	1.9	27.9
Montana	56.2	13.0	0.5	0.4	23.2
North Dakota	33.7	9.6	0.3	0.3	28.6
South Dakota	49.5	10.4	0.4	0.4	21.0
Utah	92.9	20.9	0.8	0.7	22.5
Wyoming	30.1	6.8	0.3	0.2	22.6
Region IX, Total	1,839.5	510.5	16.5	17.3	27.8
Arizona	160.8	46.6	1.4	1.6	29.0
California	1,567.8	429.9	14.0	14.6	27.4
Hawaii	47.0	13.9	0.4	0.5	29.6
Nevada	63.9	20.1	0.6	0.7	31.5
Region X, Total	563.7	151.0	5.0	5.1	26.8
Alaska	45.7	10.7	0.4	0.4	23.3
Idaho	81.1	16.0	0.7	0.5	19.7
Oregon	176.9	41.5	1.6	1.4	23.5
Washington	260.0	82.8	2.3	2.8	31.8

¹Includes 11.6 thousand firms that could not be allocated by state.

²Includes 2.4 thousand firms that could not be allocated by state.

Note: Detail may not add to total because of rounding. The number of sole proprietorships in this table exceeds the number for 1982 in industry tables of this text. The Internal Revenue Service used a count of tax returns rather than business activities for the industry detail to improve estimates of business receipts and net income of sole proprietorships.

Source: U.S. Department of the Treasury, Internal Revenue Service, special tabulation Table K-3, "Sole Proprietorship Businesses: Business Receipts and Net Income, by Sex of Proprietor, Major Industry and by State," 1982.

Operated Nonfarm Sole Proprietorships by SBA Region and State, 1982

Region/State	All Nonfarm	Female- Operated	U S Total (Percent)		State (Percent)
	(Millions of Dollars)		All Nonfarm	Female- Operated	Female- Operated
Total Nonfarm	433,664.9¹	41,717.1²	100.0	100.0	9.6
Region I, Total	18,797.1	2,078.8	4.3	5.0	11.1
Connecticut	4,648.7	521.5	1.1	1.2	11.1
Maine	1,303.1	153.2	0.3	0.4	11.8
Massachusetts	9,144.2	774.4	2.1	1.9	8.5
New Hampshire	1,392.3	254.3	0.3	0.6	18.3
Rhode Island	1,415.8	227.9	0.3	0.5	16.1
Vermont	893.0	147.5	0.2	0.4	16.5
Region II, Total	34,099.9	2,825.2	7.9	6.8	8.3
New Jersey	10,626.7	726.5	2.5	1.7	6.8
New York	23,473.2	2,098.7	5.4	5.0	8.9
Region III, Total	37,607.9	3,842.9	8.7	9.2	10.2
Delaware	629.3	278.8	0.1	0.7	44.3
District of Columbia	290.4	102.0	*	0.2	35.1
Maryland	7,051.1	795.6	1.6	1.9	11.3
Pennsylvania	21,740.0	1,730.2	5.0	4.1	8.0
Virginia	5,596.0	689.0	1.3	1.7	12.3
West Virginia	2,301.1	247.3	0.5	0.6	10.7
Region IV, Total	64,770.9	6,115.0	14.9	14.7	9.4
Alabama	6,592.3	478.9	1.5	1.1	7.3
Florida	18,623.1	1,720.6	4.3	4.1	9.2
Georgia	7,707.7	785.0	1.8	1.9	10.2
Kentucky	6,605.2	973.6	1.5	2.3	14.7
Mississippi	5,155.7	418.2	1.2	1.0	8.1
North Carolina	8,176.6	762.1	1.9	1.8	9.3
South Carolina	4,477.5	446.0	1.0	1.1	10.0
Tennessee	7,432.8	530.6	1.7	1.3	7.1
Region V, Total	68,392.0	7,903.7	15.8	19.0	11.6
Illinois	21,902.9	2,529.4	5.0	6.1	11.5
Indiana	8,057.3	1,114.5	1.9	2.7	13.8
Michigan	10,719.0	1,385.3	2.5	3.3	12.9
Minnesota	6,790.4	576.2	1.6	1.4	8.5
Ohio	15,245.5	1,728.3	3.5	4.1	11.3
Wisconsin	5,676.9	570.0	1.3	1.4	10.4

Operated Nontarm Sole Proprietorships by SBA Region and State, 1982--
Continued

Region/State	All Nonfarm (Millions of Dollars)	Female- Operated	U S Total (Percent)		State (Percent)
			All Nonfarm	Female- Operated	Female- Operated
Region VI, Total	72,671.5	5,831.1	16.8	14.0	8.0
Arkansas	5,190.2	438.4	1.2	1.0	8.4
Louisiana	8,942.2	929.2	2.1	2.2	10.4
New Mexico	2,535.1	303.7	0.6	0.7	12.0
Oklahoma	12,301.4	936.8	2.8	2.2	7.6
Texas	43,702.6	3,223.0	10.1	7.7	7.4
Region VII, Total	28,634.2	2,449.5	6.6	5.9	8.6
Iowa	7,252.1	470.6	1.7	1.1	6.5
Kansas	7,033.5	512.4	1.6	1.2	7.3
Missouri	11,079.5	1,231.2	2.6	3.0	11.1
Nebraska	3,269.1	235.3	0.7	0.6	7.2
Region VIII, Total	15,672.3	724.2	3.6	1.7	4.6
Colorado	6,930.9	415.9	1.6	1.0	6.0
Montana	1,994.6	103.2	0.5	0.2	5.2
North Dakota	1,120.8	45.0	0.3	0.1	4.0
South Dakota	1,876.7	25.0	0.4	*	1.3
Utah	2,679.6	86.7	6.2	0.2	3.2
Wyoming	1,069.7	48.4	2.5	0.1	4.5
Region IX, Total	73,214.8	8,276.4	16.9	19.8	11.3
Arizona	3,796.5	741.4	0.9	1.8	19.5
California	66,626.3	7,261.9	15.4	17.4	10.9
Hawaii	897.0	168.5	0.2	0.4	18.8
Nevada	1,895.0	104.6	0.4	0.2	5.5
Region X, Total	19,599.7	1,633.7	4.5	3.9	8.3
Alaska	1,473.2	151.2	0.3	0.4	10.3
Idaho	3,846.1	337.8	0.9	0.8	8.8
Oregon	6,398.3	271.1	1.5	0.6	4.2
Washington	7,882.1	873.6	1.8	2.1	11.1

¹Includes \$204.6 million that could not be allocated by state.

²Includes \$36.3 million that could not be allocated by state.

Note: Detail may not add to total because of rounding.

*Less than .05 percent

Source: U.S. Department of the Treasury, Internal Revenue Service, special tabulation Table K-3, "Sole Proprietorship Businesses: Business Receipts and Net Income, by Sex of Proprietor, Major Industry and State," 1982.

Table A6.22 Number of Enterprises in the Small Business Data Base by SBA Region and Sex of Owner-Operator, 1981

	Region ¹	Male-Female Jointly Operated			Percent of Total Enterprises	Male-Operated as Percent of Total	Female-Operated as Percent of Total	Female-Operated as Percent of Region
		Total	Male-Operated	Female-Operated				
Total		5,825	3,960	552	100.0	100.0	100.0	9.5
Region I	I	322	236	25	5.5	6.0	4.5	7.7
Region II ²	II	583	432	51	10.0	10.9	9.3	8.8
Region III	III	541	405	32	9.3	10.2	5.9	6.0
Region IV	IV	864	612	87	14.8	15.5	15.8	10.0
Region V	V	1,177	802	126	20.2	20.2	22.8	10.7
Region VI	VI	757	499	59	13.0	12.6	10.6	7.8
Region VII	VII	364	221	35	6.3	5.6	6.4	9.7
Region VIII	VIII	188	124	19	3.2	3.1	3.4	9.9
Region IX	IX	744	471	88	12.8	11.9	15.9	11.8
Region X	X	285	158	30	4.9	4.0	5.4	10.4

¹The 10 regions of the U.S. Small Business Administration are defined as follows

- I Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- II New Jersey, New York
- III Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
- IV Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
- V Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
- VI Arkansas, Louisiana, New Mexico, Oklahoma, Texas
- VII Iowa, Kansas, Missouri, Nebraska
- VIII Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

IX Arizona, California, Hawaii, Nevada
X Alaska, Idaho, Oregon, Washington

²Excludes Puerto Rico

Note: Estimates are derived from a sample of the Small Business Data Base Master Establishment List (MEL) of more than 8.1 million establishments enterprise records. The MEL is created by matching two commercially available sources: The Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval file, a "Yellow Pages" telephone listing. Detail may not add to total because of rounding. Percentages derived from unrounded data.

Source: Small Business Data Base, Ownership Characteristics Survey, 1984.

Table A6.23 Prime Contract Actions Over \$10,000 to Small Business and Women-Owned Business by Product or Service Code FY 1983

Product/Service	Total Women-Owned Business Actions (Thousands of Dollars)		Small Business Share of Total Prime Contract Actions (Percent)		Women-Owned Business Share of Small Business Prime Contract Action (Percent)	
	FY 1982	FY 1983	FY 1982	FY 1983	FY 1982	FY 1983
Total	545,467	603,722	15.36	14.11	2.34	2.77
Agriculture	0	15	21.87	2.25	.00	10.56
Community Services and Development	564	0	20.67	11.74	32.36	.00
Defense Systems	6,468	2,629	2.94	3.14	1.98	.71
Defense — Other	2,792	3,052	15.13	17.89	.93	.95
Economic Growth and Productivity	65	11	7.23	35.64	5.28	19
Education	1,436	934	17.09	14.71	34.37	22.22
Energy	1,718	387	3.84	3.02	5.02	1.39
Environment	967	303	22.85	22.99	2.75	.98
General Services and Technology	96	446	10.28	10.77	55	1.83
Housing	0	0	129.13*	56.01	.00	.00
Income Security	0	0	82.13	24.39	.00	.00
International Affairs and Cooperation	0	0	12.02	.00	.00	.00
Medical	1,990	1,214	12.03	12.59	5.05	3.51
Natural Resources	90	115	13.18	17.71	2.61	4.74
Social Services	0	0	100.00	83.90	.00	.00
Space	2,903	2,933	1.35	1.20	5.15	4.80
Transportation — Modal	266	236	26.03	16.19	3.48	4.50
Transportation — General	1,209	1,448	41.64	48.43	5.53	4.27
Transportation — Commodity	0	17	25.54	34.48	.00	.05
Mining	3	70	45.34	51.59	.04	2.05
Other Research and Development	2,892	3,641	8.71	6.92	3.19	4.22

Subtotal, Research and Development

	23,459	17,451	4,75	4,68	2,46	1,72
Purchasing Structures and Facilities	0	0	0.0	4 55	0.0	.00
Natural Resources Management	2,433	4,419	71 30	55 42	2 75	4.01
Social Services	534	1,088	10 24	11 88	1 56	1 81
Quality Control, Testing and Inspection	222	436	14 69	16 59	1 13	1 57
Maintenance, Repairs and Rebuilding of Equipment	8,668	20,749	15 47	19 59	1 09	2 33
Modification of Equipment	211	218	4 18	6 48	46	28
Technical Representative Services	1,800	2,324	9 01	8 35	2 90	3 49
Operation of Government-Owned Services	26,428	6,293	.73	1.22	30.75	4.27
Installation of Equipment	2,020	2,923	13 64	8 98	6 54	11.45
Salvage Service	- 137-	127	66 96	60 21	- 99*	86
Dependent Medicare Services	0	0	27	0 0	00	0 0
General Health Care Services	687	5,658	3 15	3 48	6.25	95 77
Laboratory Testing Services	2	12	28 09	25 40	06	40
Nursing and Nursing Home Care	2,894	2,804	66 86	65 79	5 00	3 33
Specialized Medical Services	609	1,888	35 17	50 08	5 44	9.17
Other Medical Services	2,106	2,922	19 50	28 49	15 33	16.00
Architectural and Engineering Construction Services	1,114	1,912	47 33	53 95	59	.87
Architectural and Engineering General Services	3,056	2,951	22.26	19 34	97	87
Automatic Data Processing	12,424	18,111	20 73	21.03	5 20	5 94
Management and Professional Services	24,845	35,431	31 97	17 62	1 82	4 68
Special Studies	9,786	10,062	29 19	26 71	4 03	4 47
Administrative Support Services	138	966	99.78	66.26	2 80	11 36
Management Support Services	1,754	969	13.51	7 94	3.09	6 89
Utilities	205	64	1 17	29	.42	58
Housekeeping Services	27,213	49,166	77.97	74 80	3 40	6 44
Photography, Mapping, Printing, and Publishing	2,934	2,699	51.21	40.83	3.40	3 43
Training Services	23,975	18,318	17 55	16 73	23 65	17 33
Transportation and Travel	6,978	7,973	8 69	18 28	3 03	1.60
Lease or Rental of Equipment	1,875	2,032	13.20	21 61	1.33	99
Lease or Rental of Facilities	8,359	802	43 55	16 05	5 39	2.56

Table A6.23 Prime Contract Actions Over \$10,000 to Small Business and Women-Owned Business by Product or Service Code, FY 1983
FY 1983—Continued

Product/Service	Total Women-Owned Business Actions (Thousands of Dollars)		Small Business Share of Total Prime Contract Actions (Percent)		Women-Owned Business Share of Small Business Prime Contract Actions (Percent)	
	FY 1982	FY 1983	FY 1982	FY 1983	FY 1982	FY 1983
Construction of Structures/Facilities	35,320	88,126	32.40	41.04	1.55	3.37
Maintenance, Repair, and Alteration of Rental Property	69,395	92,652	64.67	69.22	3.06	3.27
Subtotal, Other Services and Construction	277,848	384,095	20.88	21.45	2.84	3.64
Weapons	2,079	1,412	7.42	9.43	1.84	1.01
Nuclear Ordnance	12	0	3.51	33.39	33	00
Fire Control Equipment	1,085	683	4.56	2.46	1.50	1.81
Ammunition and Explosives	17,914	8,907	13.83	19.05	4.33	1.96
Guided Missiles	1,824	1,206	1.20	1.06	2.62	1.62
Aircraft and Airframe Structural Parts	2,087	2,519	97	87	1.93	1.93
Aircraft Components and Accessories	3,202	3,413	10.92	5.67	2.06	2.16
Aircraft Launching, Landing and Ground Handling Equipment	1,963	1,022	40.93	44.15	1.37	.67
Space Vehicles	1,853	64	1.64	1.35	11.60	38
Ships, Small Craft, Pontoon and Floating Docks	223	89	7.05	2.64	07	.04
Ship and Marine Equipment	950	841	26.43	24.11	1.79	1.58
Railway Equipment	72	58	9.59	47.04	4.76	3.74
Ground Effect and Motor Vehicles, Trailers and Cycles	1,920	2,485	15.76	12.79	46	66
Tractors	183	190	61.66	13.99	1.44	2.34
Vehicular Equipment Components	12,222	16,739	13.58	18.89	6.63	7.84
Tires and Tubes	82	0	34.11	26.80	24	00
Engines, Turbines, and Components	4,140	16,282	3.88	3.97	1.97	7.94
Engine Accessories	3,437	1,237	16.25	14.41	4.00	1.66

Mechanical Power Transmission Equipment	739	642	23 96	18.47	3 50	3 10
Bearings	181	223	14 30	11 28	1 09	2 51
Woodworking Machinery and Equipment	0	76	68 69	79.07	00	9 91
Metalworking Machinery	1,285	867	75 58	51 69	2 58	2 01
Service and Trade Equipment	2,140	163	64 37	50 90	9 09	1.04
Special Industrial Machinery	291	71	4 85	24 10	.57	.10
Agricultural Machinery and Equipment	189	190	60.92	59.22	4 25	3 89
Construction, Mining, and Highway Maintenance Equipment	3,890	7,852	28 16	10 44	10.50	24 20
Materials Handling Equipment	4,048	2,496	25 92	29 10	5.08	3 43
Rope, Cable, Chain, and Fittings	521	252	61 10	57 68	2.28	1 38
Refrigerating, Air Conditioning, and Circulating Equipment	2,591	3,359	50 43	60 46	3 11	4 29
Fire Fighting, Rescue, and Safety Equipment	3,337	2,684	44 91	51 95	2 75	2 35
Pumps and Compressors	916	1,850	21.25	17 48	2 04	5 24
Furnace, Steam Plant and Driving Equipment and Nuclear Reactors	667	482	1 34	1 28	2.72	2 85
Plumbing, Heating, and Sanitation Equipment	548	158	74 92	74 67	1 73	6 5
Water Purification and Sewage Treatment Equipment	335	100	79 78	40 08	.68	2 06
Pipe, Tubing, Hose, and Fittings	2,481	1,808	38.95	**	3.47	3 74
Valves	735	273	48 31	43 36	85	.48
Maintenance and Repair Shop Equipment	5,181	1,566	18.44	13 37	4 46	1 73
Hand Tools	470	449	53.30	58 94	1.10	1 11
Measuring Tools	78	0	62.73	47 41	1.33	00
Hardware and Abrasives	2,718	1,085	37 58	41 00	3 89	2 42
Prefabricated Structure and Scaffolding	550	628	27.63	30 46	1.20	1 31
Lumber, Millwork, Plywood, and Veneer	2,525	1,485	76 09	68 83	8.75	7 19
Construction and Building Materials	1,603	650	48 69	64 21	2 80	9 2
Communication, Detection and Coherent Radiation Equipment	19,873	14,397	7 10	5 38	3 63	2.98
Electrical/Electronic Equipment Companies	6,063	9,383	17 50	12 99	2 16	4 15
Fiber Optics Materials, Components, Assemblies and Accessories	28	0	37 48	12 62	1 95	00
Electric Wire and Power Distribution Equipment	8,449	7,526	34 44	37 15	3.71	2 83
Lighting Fixtures and Lamps	1,137	424	52 88	58 75	2.42	9 74
Alarm and Signal Systems	60	237	32.21	20.48	.62	1 74
Medical, Dental, and Veterinary Equipment and Supplies	5,017	2,139	16 94	18.46	3.99	1 55

Table A6.23 Prime Contract Actions Over \$10,000 to Small Business and Women-Owned Business by Product or Service Code, FY 1982-FY 1983—Continued

Product/Service	Total Women-Owned Business Actions (Thousands of Dollars)		Small Business Share of Total Prime Contract Actions (Percent)		Women-Owned Business Share of Small Business Prime Contract Actions (Percent)	
	FY 1982	FY 1983	FY 1982	FY 1983	FY 1982	FY 1983
Instruments and Laboratory Equipment	5,613	3,953	17.99	19.47	1.79	1.28
Photographic Equipment	869	1,135	17.15	29.21	2.39	2.42
Chemicals and Chemical Products	1,507	904	50.40	63.83	1.96	1.00
Training Aids and Devices	757	1,165	14.18	12.80	.84	1.25
General Purpose ADP (Support) Equipment, Software and Supplies	5,652	9,060	20.93	21.31	2.34	2.66
Furniture	28,373	1,647	53.63	62.27	16.71	1.28
Household and Commercial Furnishings and Appliances	2,031	767	45.46	49.59	5.11	1.78
Food Preparation and Serving Equipment	1,436	1,116	55.34	61.14	3.97	2.38
Office Machines and Visible Record Equipment	198	283	27.63	31.99	.87	82
Office Supplies and Devices	1,440	2,132	30.15	34.09	3.03	3.77
Books Maps and Other Publications	539	977	26.55	17.01	2.82	5.41
Musical Instruments, Phonographs, and Home-type Radios	396	0	57.87	53.07	18.16	.00
Recreational and Athletic Equipment	69	75	52.55	53.49	1.24	1.89

Cleaning Equipment and Supplies	235	277	24 18	36 67	1 12	98
Brushes, Paints, Sealers and Adhesives	225	197	58 56	61 44	1 28	105
Containers, Packaging and Packing Supplies	4,202	1,678	60 39	67 57	3 73	1 29
Textiles, Leather, Furs, Apparel, Shoe Findings, Tents and Flags	490	1,260	56 96	81 21	.41	.74
Clothing, Individual Equipment, and Insignia	18,290	16 828	83 95	85 96	2 74	2 29
Toiletries	186	0	14 72	21 81	2 02	00
Agricultural Supplies	142	130	43 61	36 00	2 86	2 69
Live Animals	402	96	76 31	67 31	6 94	1 94
Subsistence	23,534	24,112	40 52	43 38	2 19	2 39
Fuel, Lubricants, Oils and Waxes	5,996	6,079	29 55	29 22	14	28
Nonmetallic Fabricated Materials	274	314	39 02	41 51	97	1 31
Nonmetallic Crude Materials		276	59 08	3 00	00	10 00
Metal Bars, Sheets and Shapes	1,164	287	26 00	14 99	3 13	1 35
Ores, Minerals and Their Primary Products	255	29	36 03	8 59	4 41	1 14
Miscellaneous	5,791	6,737	8 34	21 77	5 81	5 31
Subtotal, Supplies and Equipment	244,160	202,176	15 19	12 23	1 94	1 99

**Recorded data are questionable.

Note: Data included for the Department of Defense for Fiscal Year 1983 are for prime contract actions of over \$25,000 rather than over \$10,000.

Source: Federal Procurement Data Center, "Special Report 1274," August 21, 1984

*Represents deobligation or negative action

Table A6.24 Prime Contract Actions Over \$10,000 to Small Business and Women-Owned Business by Agency, FY 1982-FY 1983

Agency	Fiscal Year 1982			Fiscal Year 1983		
	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business
Total	23,355,024	519,128	2.22	21,757,837	603,790	2.78
Department of Agriculture	885,302	17,732	2.00	1,014,224	34,257	3.37
Department of Commerce	53,779	2,031	3.80	77,007	2,921	3.79
Department of Defense	18,267,432	332,974	1.82	16,372,026	375,837	2.29
Department of Education	25,827	2,557	9.90	29,716	3,583	12.05
Department of Energy	298,936	6,304**	10.92	299,706	10,373**	3.4
Department of Health & Human Services	217,034	26,075	12.01	294,608	22,260	7.55
Department of Housing and Urban Development	13,921	910	6.53	20,005	450	2.24
Department of the Interior	463,177	19,602	4.23	510,933	19,796	3.98
Department of Justice	53,888	1,330	2.46	62,548	2,929	4.68
Department of Labor	67,127	11,467	17.08	69,074	13,301	19.25
Department of State	48,449	1,003	2.07	44,197	1,327	3.0
Department of Transportation	578,450	18,254	3.15	507,844	41,222	8.11
Department of the Treasury	38,731	2,246	5.79	75,947	2,206	2.90
Action	1,832	68	2.95	1,228	12	.97
Commodity Futures Trading Commission	116	0	0.0	870	0	0
Consumer Product Safety Commission	584	132	22.60	1,299	122	9.39
Environmental Protection Agency	137,467	2,095	1.52	124,094	2,457	1.97
Equal Employment Opportunity Commission	2,946	16	.54	2,179	146	6.79
Executive Office of the President	2,269	603	26.57	2,077	146	7.02
Federal Emergency Management Agency	29,178	534	1.83	72,924	1,099	1.50

Federal Trade Commission	1,014	52	2.12	2,050	94	4,58
General Services Administration	623,414	18,572	2.97	563,211	11,537	2,04
International Development Cooperation Agency (AID)	83,755	6,398	7.63	77,937	8,528	10.94
Interstate Commerce Commission	609	86	14.12	3,898	0	0
National Aeronautics and Space Administration	362,863	11,412	3.14	428,106	14,362	3.35
National Foundation on the Arts and the Humanities	786	469	59.66	599	379	63.27
National Gallery of Art	346	15	4.33	1,338	0	0.0
National Labor Relations Board	1,326	17	1.28	248	0	0.0
National Mediation Board	1,284	2	15	1,070	0	0.0
National Science Foundation	2,247	1,213	53.98	2,945	1,282	43.53
Nuclear Regulatory Commission	8,465	195	2.30	10,849	162	1.49
Office of Personnel Management	13,411	591	4.40	17,476	596	3.41
Peace Corps	2,034	389	12.12	5,510	431	7.82
Pennsylvania Avenue Development Corporation	4,272	0	0	1,071	65	6.06
Railroad Retirement Board	2,474	0	0.00	2,300	0	0.0
Securities and Exchange Commission	1,346	183	13.59	1,344	65	4.83
Selective Service System	762	20	2.62	620	0	0.0
Small Business Administration	7,710	50	1.00	4,983	377	7.55
Smithsonian Institution	13,906	140	01	12,176	171	1.40
Tennessee Valley Authority	506,471	2,203	43	361,896	1,826	50
United States Arms Control and Disarmament Agency	590	0	0	549	0	0.0
United States Information Agency	5,196	222	4.27	9,609	928	9.65
Veterans Administration	516,036	30,814	5.97	664,098	28,476	4.28
All Other Agencies	8,262	152*	1.56	1,448	67	5.8

Note: Data included for the Department of Defense for Fiscal Year 1983

are for prime contract actions of over \$25,000 rather than over \$10,000

*Figure includes adjustment for difference between detail and total

**Figure was revised on basis of data from the Department of Energy,
Source: Federal Procurement Data Center, "Special Report 1226A,"
25, 1981

Table A6.25 Small Business and Women-Owned Business Prime Contract Actions of Over \$10,000 by Principal Place of Performance FY 1982-FY 1983

Place of Performance	1982			1983		
	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business
U.S. Total	22,695,774	541,366	2.39	21,008,103	583,650	2.78
Alabama	692,641	15,725	2.27	546,602	18,068	3.30
Alaska	174,487	7,267	4.15	215,556	8,185	3.79
Arizona	232,265	5,569	2.39	250,018	9,114	3.64
Arkansas	140,241	4,408	3.14	149,342	6,427	4.30
California	2,887,223	64,484	2.23	2,927,732	56,250	1.92
Colorado	264,802	11,230	4.24	317,272	10,677	3.36
Connecticut	299,136	4,930	1.64	250,253	4,120	1.64
Delaware	50,268	105	20	99,755	649	65
District of Columbia	405,563	29,050	7.16	499,978	30,055	6.01
Florida	676,594	14,526	2.14	754,460	17,147	2.27
Georgia	409,088	10,411	2.51	526,566	14,749	2.80
Hawaii	133,872	1,015	.76	197,479	9,664	4.89
Idaho	92,850	4,818	5.19	86,545	4,436	5.12
Illinois	465,468	10,950	2.35	523,942	11,671	2.22
Indiana	422,073	10,669	2.53	363,300	17,737	4.88
Iowa	86,529	2,096	2.42	104,394	1,092	1.04
Kansas	154,697	5,382	3.48	116,146	3,411	2.93
Kentucky	179,105	9,439	5.27	303,411	7,259	2.39
Louisiana	366,553	3,502	.95	266,528	12,678	4.75
Maine	80,278	227	28	71,766	638	.86

Mainland	788,477	25,310	3 21	971,145	23,485	2 41
Massachusetts	605,577	6,072	1 00	564,051	5,977	1 05
Michigan	491,633	17,932	3 64	475,337	28,672	6 03
Minnesota	139,625	3,436	2 46	171,005	3,835	2 24
Mississippi	243,310	10,650	4 37	194,975	16,516	8 47
Missouri	424,940	3,172	74	425,609	6,019	1 41
Montana	95,753	4,272	4 46	93,646	5,023	5 36
Nebraska	106,900	2,501	2 33	154,955	915	59 9
Nevada	61,606	1,158	1 87	64,100	1,936	3 02
New Hampshire	34,626	1,083	3 12	44,155	2,584	5 85
New Jersey	688,178	12,302	1 78	593,222	16,035	2 70
New Mexico	195,954	4,141	2 11	198,219	8,686	4 38
New York	1,194,934	75,072	6 28	978,366	29,720	3 03
North Carolina	350,723	-8,581*	-2 44*	381,322	7,209	1 89
North Dakota	69,011	1,954	2 83	127,083	1,893	1 48
Ohio	617,835	17,883	2 89	660,440	22,105	3 34
Oklahoma	373,401	11,445	3 06	232,703	11,577	4 97
Oregon	173,502	7,726	4 45	182,837	8,191	4 47
Pennsylvania	770,513	16,151	2 10	869,105	15,112	1 73
Rhode Island	193,545	3,374	1 74	127,764	8,066	6 31
South Carolina	290,574	4,394	1 51	301,877	4,016	1 33
South Dakota	63,064	6,297	9 98	62,641	12,498	19 95
Tennessee	541,896	5,854	1 08	433,044	7,322	1 69
Texas	2,524,169	39,452	1 56	1,430,934	35,982	2 51
Utah	138,982	3,798	2 73	165,989	4,652	2 80

Table A6.25 Small Business and Women-Owned Business Prime Contract Actions of over \$10,000 by Principal Place of Performance FY 1982-FY 1983—Continued

Place of Performance	1982			1983		
	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business	Small Business Actions (Thousands of Dollars)	Women-Owned Business Actions (Thousands of Dollars)	Women-Owned Business As a Percent of Small Business
Vermont	11,133	209	1.87	16,295	2,994	18.37
Virginia	2,076,834	32,265	1.55	1,323,699	33,615	2.53
Washington	443,379	8,839	1.99	454,692	8,393	1.84
West Virginia	66,111	1,092	1.65	82,752	2,305	2.78
Wisconsin	669,407	6,136	91	601,408	3,974	66
Wyoming	36,449	174	.47	53,688	316	.59

Note: The totals for small business and women-owned business prime contract actions differ from those in previous tables because of revisions to the data after the agency and product/service tabulations were prepared in July and August 1984, respectively, and because some actions were not classified by place of performance. Data included for the Department of Defense for Fiscal Year 1983 are for prime contract actions of over \$25,000 rather than over \$10,000.

*Represents deobligation or negative action

Source: Federal Contract Actions by States are based on a special tabulation compiled for the Small Business Administration by the Federal Procurement Data Center November 1984.

Minority-Owned Business

Synopsis

Minorities have made modest gains in business in recent years, according to available data. In 1977, the year of the last complete *Survey of Minority-Owned Business Enterprises*, the 393,000 self-employed business activities of nonwhite persons represented 70 percent of all minority-owned firms. From 1977 to 1983, the number of nonwhite self-employed persons increased in relation to the number of nonwhites of an age to enter business activities (16 years and over).

By 1983, there were approximately 21 self-employed persons per 1,000 nonwhite persons aged 16 or over—an increase of 5 percent over 1977.

In general, self-employed nonwhite persons are younger than their white counterparts, and earn less from their business activities. In 1980, nonwhites had an average income of \$7,208; whites averaged \$9,398. Incomes of both groups improved at higher levels of education.

Public and private sector efforts to provide debt and equity financing for minority-owned businesses have given minorities incentives to enter new areas and contributed to the liquidity of firms in early stages. These initiatives have encouraged entry of minority-owned businesses into nontraditional lines of industry, particularly construction, manufacturing and wholesale trade. Other efforts have focused on financing firms under 3 years old in retail trade, transportation, services, and manufacturing.

Minority-owned firms in selected nontraditional lines have been found to be as profitable as their nonminority counterparts. Nevertheless, these and other minority-owned firms are more vulnerable to fluctuations such as the 1980-1982 recession, because they generally carry heavier burdens of long-term debt.

Federal Government procurement from minority-owned firms has grown. In December 1982, federal agencies were directed to increase minority contracting goals; the value of prime actions and subcontracts to minority-owned businesses increased by 10 percent in 1983. Section 8(a) of the Small Business Act authorizes the SBA to subcontract federal awards for goods and services to small businesses owned and controlled by socially and economically disadvantaged persons. The total value of 8(a) subcontracts increased from \$2 billion in FY 1982 to \$2.3 billion in 1983 and \$2.7 billion in 1984.

and profitable operations. Preliminary research conducted for the U.S. Small Business Administration (SBA) on small, family-owned businesses suggests these firms often may elect to remain small because they are profitable at small sizes.¹ The study found the use of paid family employees, who probably are strongly motivated and productive, was a strong indicator of high productivity and profitability. Many minority-owned businesses also are family owned, and the implications of this research should apply to these small firms.²

Minority-Owned Business Data Bases

The *1977 Survey of Minority-Owned Business Enterprises* was the last complete survey of minority-owned businesses. More recent information is derived principally from the data bases of the Bureau of the Census, the Bureau of Labor Statistics, and the Minority Business Development Agency (MBDA). Preliminary findings also are becoming available from a new data base on minority-owned business being developed by the SBA.³ The various data bases on minority-owned businesses cover different numbers, types, and sizes of firms, and different periods between 1977 and 1984. Each of the data bases contributes to more complete information on minority-owned businesses. In lieu of a full census, all are useful in assessing aspects of minority-owned business activity since 1977.

Legal Form of Organization

In the *1977 Survey of Minority-Owned Business Enterprises*, 75 percent of the 561,395 minority-owned businesses were sole proprietorships, 4 percent were partnerships, and 2 percent were corporations. The re-

¹Bruce A. Kirchhoff and Judith J. Kirchhoff, "Productivity and Profitability Among Small Family Businesses," February 1984, an unpublished study prepared for the Office of Advocacy, U.S. Small Business Administration.

²Minority-owned businesses include firms owned by blacks, persons of Spanish or Latin ancestry and persons of American Indian, Asian, and other nonwhite origins or descent.

³The 1980 Census of Population and Housing, and other current population surveys of the Bureau of the Census, U.S. Department of Commerce, provide data on economic characteristics of the population. Statistics on self-employed persons are available from the Current Population Survey of the Bureau of the Census and the Bureau of Labor Statistics (BLS), U.S. Department of Labor. A special minority business data base is maintained by the Minority Business Development Agency (MBDA), U.S. Department of Commerce, for use in selected types of analyses of minority-owned businesses.

organization. However, almost all the 107,007 unclassified firms also are considered to be sole proprietorships, and approximately 93 percent of all minority-owned businesses in 1977 are grouped as sole proprietorships.⁴

By any criterion, sole proprietorships are small businesses. In 1982, the last year for which receipts size data on sole proprietorships are available, almost 91 percent had less than \$100,000 in business receipts and 54 percent had receipts of less than \$10,000.⁵

Data bases of persons primarily engaged in self-employment traditionally are identified with relatively small business operations and the sole proprietorship type of legal entity.⁶ In 1977, the 393,000 nonwhite persons engaged mainly in self-employed business activities corresponded to 70 percent of all 1977 minority-owned businesses and 74 percent of the 1977 minority-owned sole proprietorships.⁷ Because nonwhite self-employed workers represent a large percentage of minority-owned businesses, change in the number of self-employed has been used as an indicator of change in minority-owned businesses since the 1977 Census Survey.⁸

⁴Bureau of the Census, U.S. Department of Commerce, *1977 Survey of Minority-Owned Enterprises* (Washington, D.C.: U.S. Government Printing Office, December 1980), p. 226, and U.S. Small Business Administration, *The State of Small Business: A Report of the President*, (Washington, D.C.: U.S. Government Printing Office, March 1983), p. 307.

⁵Internal Revenue Service, U.S. Department of the Treasury, an unpublished tabulation of sole proprietorship returns, 1982.

⁶A few self-employed workers in the 1980 Census of Population data were incorporated, but statistics on self-employment collected monthly in the *Current Population Survey* by the Bureau of the Census exclude incorporated activities.

⁷Self-employed persons as defined in the Current Population Survey are primarily engaged in work in their own business or profession for a fee or profit. Sole proprietorships also include numerous part-time and intermittent business activities of wage-and-salary workers. See Thomas A. Gray, "Data Sources for Research on Small Business Innovation and Entrepreneurship" (Washington, D.C.: Office of Advocacy, U.S. Small Business Administration, April 2, 1984) p. 5.

⁸Self-employment data of the Bureau of Labor Statistics, U.S. Department of Labor—used as a proxy to assess change in the number of minority-owned business—are published for "white" and "black and other (nonwhite)" races. The "black and other (nonwhite)" category excludes "white" minorities of Spanish or Latin American ancestry covered by the Bureau of the Census term, "minority-owned business." The term "black and other" describes the race of the worker and includes all persons who identify themselves as other than white,

Table A.1 *Comparison of Selected Data Bases of Minority-Owned Businesses by Industry Division*

Industry Division	Bureau of the Census Survey ¹ 1977	Bureau of Labor Statistics Self-Employed Workers ¹ 1983	Small Business Administration Survey ¹ 1984	Minority Business Development Agency Data 1980 ²
All Nonfarm (Number)	561,395	503,000	383,046	1,903
All Nonfarm (Percent)	100.0	100.0	100.0	100.0
Construction	9.3	11.5	10.5	26.0
Manufacturing	2.2	5.3	4.7	21.0
Transportation, Communications & Public Utilities	6.5	5.9	1.7	5.0
Wholesale Trade	1.7	2.8	3.8	16.0
Retail Trade	26.2	23.8	33.7	13.0
Finance, Insurance & Real Estate	5.1	3.6	7.6	1.0
Services	41.7	47.1	34.9	8.0
Other ³	7.3	0.0	3.1	10.0

¹Data are estimates for the universe of minority-owned businesses in the data base

²Data represent the number of financial records of minority-owned businesses in the Minority Business Development Agency Data Base

³Includes industries not classified

Source: U.S. Department of Commerce, Bureau of the Census, *1977 Survey of Minority-Owned Business Enterprises*, Washington, D.C., Government Printing Office, December 1980, p. 226; U.S. Department of Labor, Bureau of Labor Statistics, unpublished tabulations of annual average data on employed persons, 1983; U.S. Small Business Administration, *Small Business Data Base: Ownership Characteristics Survey, 1984*, and *Development Through Applied Science, New Perspectives on Minority Business Development*, San Antonio, August 1983, a study prepared for the Minority Business Development Agency, U.S. Department of Commerce, p. 18.

employed worker data bases, the MBDA data base is identified with larger and more successful firms. In 1980, approximately 81 percent of the MBDA minority-owned businesses were corporations, and only 19 percent were classified as noncorporate.⁹

The SBA Small Business Data Base (SBDB) of minority-owned businesses also includes more substantial representation of corporate firms than the 1977 Census Survey and the self-employment data bases. In 1984, of the firms that identified themselves as minority-owned, 46 percent were corporations, 11 percent were partnerships, and 43 percent were sole proprietorships.¹⁰ The largest number of the black and Spanish-owned businesses were sole proprietorships, but Asian and other nonwhite businesses more often were incorporated (Table A 6).

Industry Divisions The 1977 Census Survey and the BLS self-employed data bases show the greatest similarities in percentage distributions of minority-owned business by industry divisions (Table A.1). The SBDB has relatively more firms in retail trade and finance, insurance, and real estate but shows undercoverage in services. A relatively larger percentage of the black and miscellaneous minority-owned businesses are in services, while more Asian and Spanish-owned firms are in retail trade (Table A 7). Geographically, the major groupings of the SBDB firms are in Regions VI and IX and reflect heavy concentrations of minority-owned businesses in California and Texas (Table A.8).

The MBDA data base is concentrated in the nontraditional areas of construction, manufacturing, and wholesale trade. Its coverage of the traditional areas of minority business participation—retail trade, services, and fi-

including blacks, American Indians, Alaskan Natives, and Asians and Pacific Islanders. "Minority-owned business" includes firms owned by blacks, persons of Spanish or Latin American ancestry, persons of American Indian, Asian, and other nonwhite origin or descent.

⁹Development Through Applied Science (DETAS), *New Perspectives on Minority Business Development* (San Antonio, Texas, August 1983), a study prepared for the MBDA, U.S. Department of Commerce, pp. 4 and 18. The 1980 data base included 1,903 minority financial records of which 1,535 were corporate and 368 were noncorporate. Hereafter, DETAS, *New Perspectives*.

¹⁰These estimates are based on data derived from the Ownership Characteristics Survey, 1984. The Small Business Data Base universe includes 8.1 million nonfarm establishments and enterprises, of which 3.9 million are sole proprietorships.

Participation of Minorities in Business

When the last survey of minority-owned business was conducted in 1977, the 561,395 minority-owned firms represented 28 business owners for every 1,000 minority persons aged 16 years or over. The related firms that the Bureau of the Census classified as nonminority-owned represented 65 business owners per 1,000 nonminority persons.¹¹

Self-employment among minorities accounted for approximately 70 percent of all minority firms in 1977 and indicates that minority participation in all types of business has not increased as much as among whites. Nonwhite self-employment increased 5 percent between 1977 and 1983, from 20 to 21 self-employed persons per 1,000 minority persons aged 16 and over; white self-employment increased 15 percent (Table A.9).

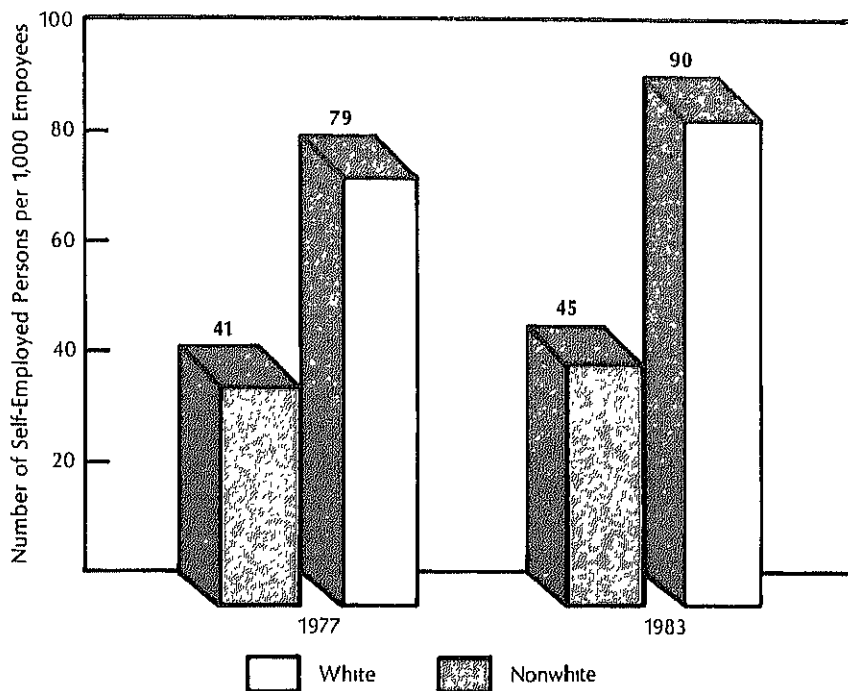
Nevertheless, from 1977 to 1983, nonwhite self-employed persons did gain in relation to nonwhite wage-and-salary workers. In 1977, 41 nonwhite persons were self-employed for every 1,000 nonwhite wage-and-salary workers. By 1983 there were 45 self-employed nonwhite workers for every 1,000 nonwhite wage-and-salary workers, an increase of 10 percent. The comparable increase for white persons was 14 percent during the same period (Table A.10 and Chart A.1).

Characteristics of Minority Self-Employed Persons

In general, nonwhite self-employed persons are younger than whites and earn less from their business activities than their white counterparts. In 1980, their average age was 38, as compared with 43 years for white self-employed persons (Table A.11). Nonwhites had average self-employment incomes of \$7,208, or 77 percent of the

¹¹Data derived from Bureau of Census, U.S. Department of Commerce, *1977 Survey of Minority-Owned Business Enterprises*; *idem*, *Preliminary Estimates of the Population of the United States by Age, Sex and Race 1970 to 1981* (Washington, D.C.: U.S. Government Printing Office, 1982), Table 2, and Washington, D.C.: U.S. Government Printing Office, 1979), p. 226; *Estimates of the Population of the United States by Age, Sex and Race, 1980 to 1983* (Washington, D.C.: U.S. Government Printing Office, 1984), Table 2. The 1977 business participation rates for all minority and nonminority businesses are inflated slightly by the inclusion of corporation and partnership data in the totals. The age range for all business owners is not known, but in 1980 the age range of self-employed persons was 16 to 90 years. This information was derived from an unpublished tabulation of the 1980 Census of Population 1/1,000 sample.

Chart A.1 Self-Employed Persons Per 1,000 Employees by Race, 1977 and 1983



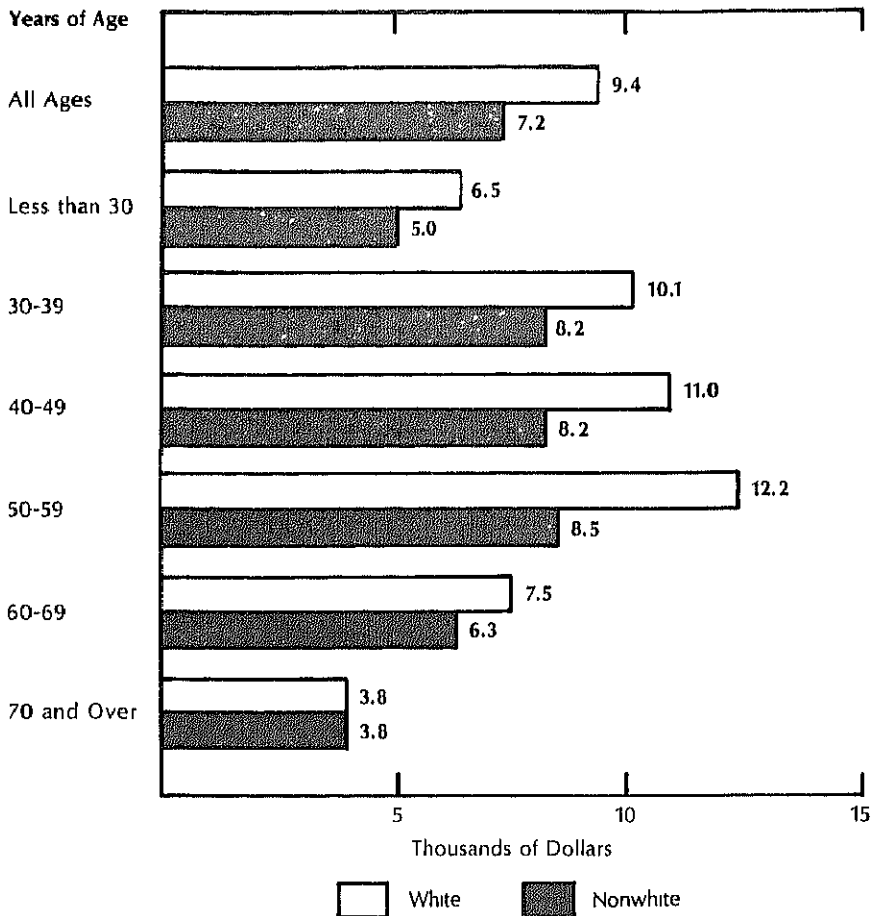
Source: U.S. Department of Labor, Bureau of Labor Statistics, *Bulletin 2096 Labor Force Statistics Derived from the Current Population Survey: A Databook* (Washington, D.C.: Government Printing Office, September 1982), and *idem*, special tabulations of the *Current Population Survey*, 1983.

\$9,398 average income of whites. Similar income differences prevailed at all age categories through 69 years and were greatest from 50 to 59 years, at which level self-employment incomes were at a maximum of \$12,204 for whites and \$8,509 for nonwhites (Chart A.2).

Incomes of both white and nonwhite self-employed workers in 1980 improved as education levels increased. Persons with less than a high school education had the lowest average incomes; those with more than 4 years of college earned the highest incomes (Table A.12). The income level of whites with more than 4 years of college was 85 percent above the average of all educational groups; for nonwhites it was 107 percent above the nonwhite average (Chart A.3).

The least difference in incomes of white and nonwhite self-employed was for persons who completed 4 years of

Chart 11: Average Self-Employment Income by Age, 1980



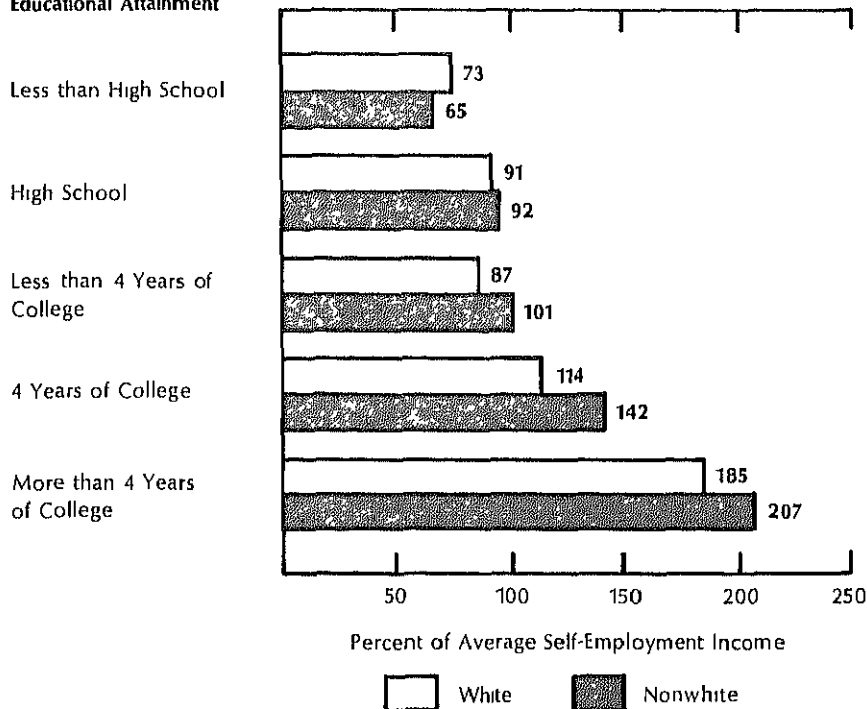
Source: Special tabulation of self employment figures derived from the 1980 Census of Population, 1/1,000 sample.

college. In this group, the average level of income for nonwhites was 95 percent of the level of whites.

Minority-Owned Business Performance

Measures of recent minority business performance are fragmentary, but government and corporate initiatives to improve minority access to credit and equity capital and to increase their participation in procurement have been beneficial.

Educational Attainment



Note: Each bar reflects what percentage of the racial group's average self-employment income was attained by its self-employed members having a specified level of educational attainment. For example, self-employed whites with less than a high school education earned 73 percent of the average white self-employment income for all levels of educational attainment.

Source: Special tabulation of self-employment figures derived from the 1980 Census of Population, 1/1,000 sample

Minority-Owned Firms Respond to Financing Incentives

A recent study found that efforts to provide debt and equity financing for minority-owned businesses have given minorities incentives to enter new areas and have contributed to the liquidity of viable firms during their early years of development.¹² These conclusions apply principally to firms in nontraditional lines of minority-owned business: construction, manufacturing, and wholesale trade. The study found that minority, nontraditional firms are as profitable as their nonminority counterparts but are more vulnerable to business fluctuations,

¹²DLTAS, *New Perspectives*, pp. 8-9 and 112-122.

Type	Financings ¹		Disbursements	
	Number	Percent	Amount (Millions)	Percent
Straight Debt	634	81.0	37.9	67.8
Debt with Equity	100	12.8	11.1	19.8
Equity	49	6.2	6.9	12.4
Total Financings	783	100.0	55.9	100.0

¹In 1983, there were 783 financings for a total amount of \$55.9 million disbursed to 677 small businesses.

Source: U.S. Small Business Administration, Investment Division, *SBIC Digest*, Part I, April 1984, p. D-2.

such as the 1980-1982 recession, because they carry heavier burdens of long-term debt.

The findings of the research also may apply to other types of small businesses. There is no accurate indicator of the demand and supply of bank loans for minority-owned firms. But some research shows that minority-owned businesses are overly dependent on debt funds.¹³ Short-term financial difficulties, more pronounced among small firms, usually are met by loans from families, relatives or shareholders, bank loans, or trade credit. Because family incomes of minorities are below average, their level of savings for business loans may be less than nonminorities.¹⁴ However, trade credit may be an important source of accounts receivable funding for firms in retail trade.

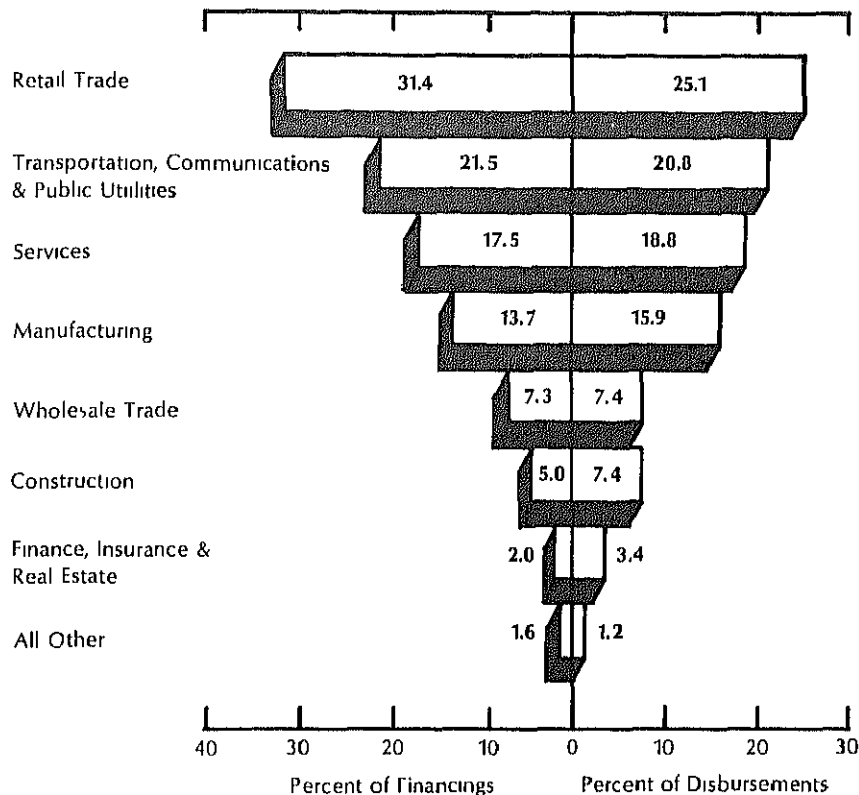
301(d) Small Business Investment Companies (MESBICs)

The number of financings by MESBICs—small business investment companies authorized to assist small firms owned and operated by socially or economically disadvantaged persons—has increased every year since 1980 (Table A.13). In 1983, the number and amount of MESBIC financings to small businesses were greater than in any previous year; straight debt financing accounted for most of the 1983 total (Table A.2).¹⁵

¹³William C. Hunter, "Financial Needs of Small Minority Firms" (Athens, Georgia, University of Georgia: a study prepared for the U.S. Small Business Administration), pp. 69-75.

¹⁴*The State of Small Business: A Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1984), p. 375.

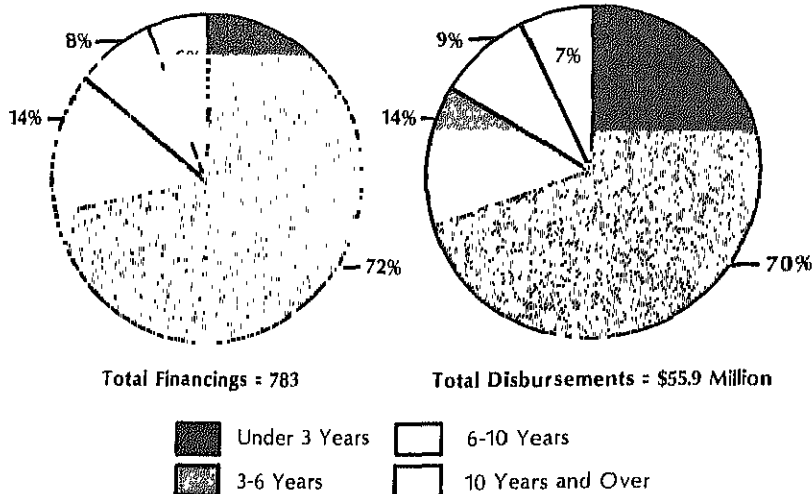
¹⁵DETAS, *New Perspectives*, pp. 120-122. Continuing heavy concentration of MESBICs in straight debt financings has been a major criticism of these companies as a source of equity investment for small



Source: U.S. Small Business Administration, Investment Division, *SBIC Digest*, Part 1, April 1984, Table D-4

MESBICs financed small businesses in all industry groups, but 84 percent of all 1983 financings went to small firms in retail trade, services, manufacturing, and transportation (Chart A.4). Corporations received 65 percent; proprietorships, 29 percent; and partnerships, 6

firms operated by socially and economically disadvantaged persons. Over time, MESBICs have made loans to small firms at substantial rates of interest in preference to making equity investments in the firms. This practice increases the cash-flow problems of small undercapitalized firms and contributes to their financial difficulties and failures.



Source: U.S. Small Business Administration, Investment Division, *SBIC Digest*, Part I, April 1984, Table D-3.

percent. In both number and amount, most MESBIC financings were made to start-up businesses less than three years old (Chart A 5).¹⁶

The amount of MESBIC financing in the first half of FY 1984 was 20 percent above that in the second half of FY 1983. The number and dollar amount in the second quarter were the highest for any single quarter.¹⁷

Procurement Policy Helps Minority-Owned Businesses

To increase participation of minority-owned firms in federal procurement, federal agencies were directed in December 1982 to purchase an estimated \$15 billion of goods and services from these firms in FYs 1983, 1984, and 1985 and to increase their minority-owned business contracting goals by 10 percent over the actual FY 1982 procurement level. The directive also recommended that federal agencies use incentive awards to encourage

¹⁶U.S. Small Business Administration, Investment Division, *SBIC Digest*, Part I, April 1984, p. 3 and Tables D-3 and D-4.

¹⁷*Ibid.*, p. 2

Business and Small Minority-Owned Business, FY 1982-FY 1983

	Contract Actions Over \$10,000 (Thousands of Dollars)		Share of Small Business Actions (Percent)		Percent Change FY 1982- FY 1983
	FY 1982	FY 1983	FY 1982	FY 1983	
Small Business Actions	23,355,024	21,757,837	100.0	100.0	-6.8
Small Minority-Owned Business Actions	2,821,384	3,112,401	12.1	14.3	10.3

Note: From FY 1982 to FY 1983 total Federal Government prime contract actions of over \$10,000 increased from \$152.0 billion to \$154.2 billion or by 1.4 percent. The awards to small minority-owned business were 1.9 percent of the FY 1982 total and 2.0 percent of the FY 1983 total. Data for the two years are not strictly comparable because FY 1983 statistics for the Department of Defense are for prime contract actions of over \$25,000 rather than over \$10,000.

Source: Federal Procurement Data Center, Special Report 1226A, July 25, 1984.

prime contractors to increase subcontracting with minority-owned businesses.¹⁸ The impact of the directive was positive: the dollar value of prime actions and subcontracts for minority-owned businesses increased in FY 1983.

*Prime Contract
Actions*

Federal procurement policy for small, minority-owned business achieved its targeted objective for FY 1983. Prime contract actions over \$10,000 for these firms increased 10 percent, from \$2.8 billion in FY 1982 to \$3.1 billion in FY 1983 (Table A.3). The Department of Defense (DOD) actions represented approximately 70 percent of the value in both years and increased almost 8 percent in FY 1983. The actual increase in DOD actions may have been more, in FY 1983 DOD did not report the value of actions between \$10,000 and \$25,000. This omission affected the comparability of all procurement data between FYs 1982 and 1983 (Table A.4).

Other federal agencies with prime contract actions over \$100 million for small, minority-owned firms in FY 1983 included the Departments of Interior and Transportation, the National Aeronautics and Space Administration and the Veterans Administration. These four agencies accounted for an additional 15 percent of the FY 1983 total (Table A.14).

¹⁸*Federal Contracts Report* (Washington, D.C.: The Bureau of National Affairs, January 3, 1983), pp. 1 and 5-6.

	Contract Actions Over \$10,000 (Thousands of Dollars)		Share of Small Business Actions (Percent)		Percent Change FY 1982– FY 1983
	FY 1982	FY 1983	FY 1982	FY 1983	
Small Business Actions	18,267,432	16,372,026	100.0	100.0	-10.4
Small Minority-Owned Business Actions	1,975,843	2,132,681	10.8	13.0	7.9

Note: From FY 1982 to FY 1983 total Department of Defense prime contract actions of over \$10,000 increased from \$121.2 billion to \$123.3 billion or by 1.7 percent. The awards to small minority-owned business were 1.6 percent of the FY 1982 total and 1.7 percent of the FY 1983 total. Data for the two years are not strictly comparable because FY 1983 statistics for the Department of Defense are for prime contract actions of over \$25,000 rather than over \$10,000.

Source: Federal Procurement Data Center, Special Report 1226A, July 25, 1984.

8(a) Contracts and Subcontracts

Many prime contract actions are awarded to small minority-owned businesses under section 8(a)(1) of the Small Business Act, which authorizes the SBA to negotiate contracts for goods and services with other federal agencies and to subcontract the work to small businesses owned and controlled by socially and economically disadvantaged persons. In FY 1982, the value of 8(a) contract actions of \$10,000 or more was 64 percent of the total for small minority-owned business; in FY 1983 it was 60 percent of the corresponding total value. The DOD contributed the principal portion of all 8(a) actions of \$10,000 and over. The total value of 8(a) contracts in FY 1982 was \$2 billion, increasing to \$2.3 billion in FY 1983 and to \$2.7 billion in 1984 (Table A.5).

Procurement Actions by States

Most of the federal prime contract actions over \$10,000 to small minority-owned businesses were performed in four states in FY 1983. California, Maryland, Texas, and Virginia each had actions totalling over \$200 million (Table A.15). Combined, the four states accounted for 42 percent of the FY 1982 awards and 39 percent of the FY 1983 awards. California-based firms were awarded 17 percent of the FY 1982 actions and 14 percent of the FY 1983 actions. Other states with FY 1983 prime contract actions of over \$75 million each for small minority-owned firms were Massachusetts, New York, Pennsylvania, Ohio, the District of Columbia, Georgia, Alabama, and Hawaii.

	Number	Amount (Thousands)	Year-to-Year Percent Change in Amount
1984	4,896	2,734,895	18.2
1983	4,898	2,312,885	15.1
1982	4,227	2,009,371	-0.3
1981	4,974	2,015,192	21.0
1980	5,218	1,666,015	62.2
1979	4,047	1,027,423	33.8
1978	3,410	767,994	35.6
1977	2,773	566,218	—

Source: U.S. Small Business Administration, Report 8A-1016, September 30, 1984.

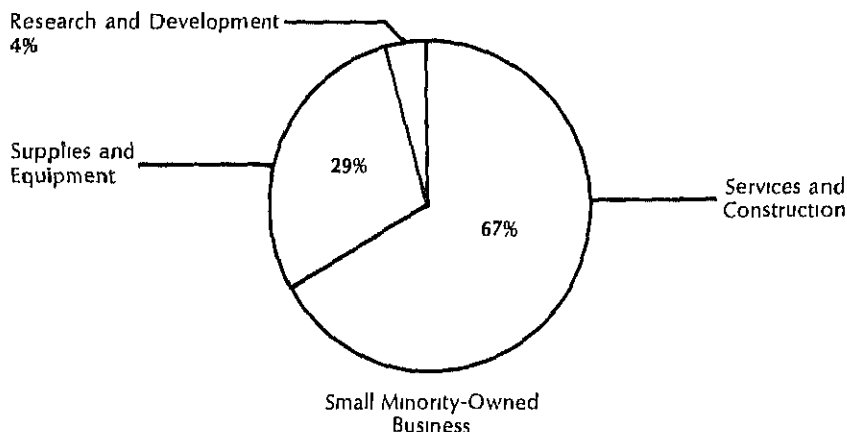
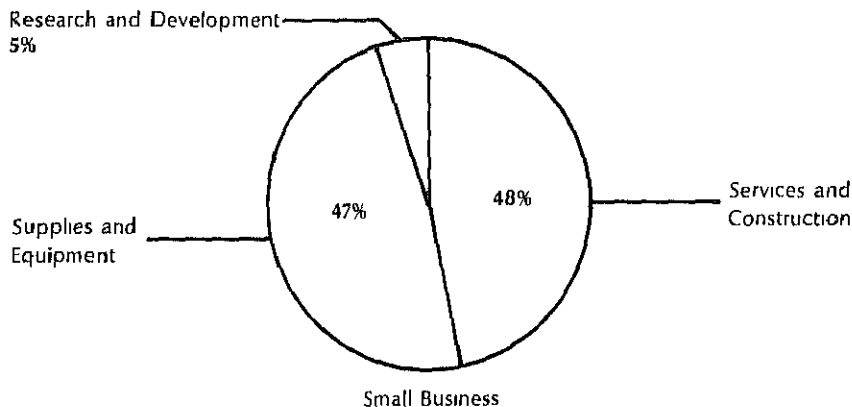
Procurement Actions for Products and Services

Minority-owned businesses have a much larger share of prime contract actions in services and construction than other small businesses (Chart A.6). The principal awards to small minority-owned firms are for housekeeping services, construction of structures and maintenance, repair and alteration of equipment, and real property (Table A.16). From FY 1972 to FY 1983 small minority-owned firms also won more contracts in a variety of special services: automated data processing; management and professional services; quality control, testing and inspection; leasing of rental equipment; and photography, mapping, printing, and publishing.

Procurement from small minority-owned firms for supplies and equipment declined from FY 1982 to FY 1983. The value of this category shifted from 37 percent of total minority prime contract actions in FY 1982 to 29 percent in FY 1983. The value and percent of research and development prime contract actions of small minority-owned firms also decreased.

Subcontracting to Minority-Owned Business

Current data on subcontracting to small and small disadvantaged business concerns are partial and do not include subcontracting of all large businesses or any small businesses. The Small Business Act, as amended by Section 211 of Public Law 95-507, requires all negotiated procurements for supplies or services of \$500,000 or more (\$1,000,000 for construction) to have a subcon-



Source: Federal Procurement Data Center, Special Report 1274, August 21, 1984

tracting plan.¹⁹ As developed by the SBA, the subcontracting program requires only large businesses to have plans for subcontracting to small and small disadvantaged businesses if they hold one or more contracts for \$500,000 or more (\$1,000,000 for construction).²⁰

¹⁹The provisions of Public Law 95-507 were implemented during 1979 and 1980.

²⁰A small business concern is considered "small" under the size standards established by the Small Business Administration (SBA) for

contracting achievements of 20 to 30 federal agencies that project a total agency procurement of \$10,000,000. Subcontracting dollars to small, disadvantaged businesses have increased for this group in each year since 1980, except 1982. The FY 1983 total of \$1 billion is a gain of 17 percent over the FY 1982 total and is 35 percent above the total for FY 1980, when the program was implemented (Table A 17).

Conclusion

Minority interest in business ownership is increasing. Small, minority-owned firms are showing an ability to take advantage of business opportunities and to compete successfully in the marketplace with a degree of profitability and success that is attracting additional financing for their start-up efforts. Since 1977, minorities have responded positively to public and private incentives to participate more in business ownership. The percentage of nonwhite persons in self-employment has increased; nonwhites have gained in self-employment in relation to wage-and-salary jobs, although to a lesser degree than whites. Minority-owned businesses, therefore, appear to be a very diverse group of small firms that are proceeding from a low base of business formation more slowly than all small businesses.

Recently, minority-owned businesses also have demonstrated their ability to compete successfully and profit-

procurement purposes. A small disadvantaged business is any small concern

- (1) that is at least 51 percent owned by one or more socially and economically disadvantaged individuals; or, in the case of any publicly-owned business, at least 51 percent of the stock is owned by one or more socially and economically disadvantaged individuals, and
- (2) whose management and daily business operations are controlled by one or more such individuals

Socially and economically disadvantaged individuals include black, Hispanic, Native and Asian-Pacific Americans, and other minorities or any other individual found to be disadvantaged by the SBA pursuant to Section 8(a) of the Small Business Act. Native Americans include American Indians, Eskimos, Aleuts, and native Hawaiians. Asian-Pacific Americans include U.S. citizens whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the Trust Territory of the Pacific Islands, the Northern Marianas, Laos, Cambodia, and Taiwan.

Race	Type of Legal Entity			
	Total	Corporation	Partnership	Sole Proprietorship
Total	382,713 (100.0)	176,012 (100.0)	43,628 (100.0)	163,073 (100.0)
Asian	77,536 (20.3)	41,037 (23.3)	6,050 (13.9)	30,449 (18.7)
Black	118,342 (30.9)	51,390 (29.2)	604 (1.4)	66,348 (40.7)
Spanish	130,072 (34.0)	46,952 (26.7)	26,218 (60.1)	56,902 (34.9)
Other	56,763 (14.8)	36,633 (20.8)	10,756 (24.6)	9,374 (5.7)

Note: Estimates are derived from a sample of the Small Business Data Base Master Establishment List (MEL) of more than 8.1 million establishment and enterprise records. The MEL is created by matching two commercially available sources, the Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval file, a "Yellow Pages" telephone listing. Estimates for various classifications of data differ slightly because some respondents did not answer all questions.

Detail may not add to total because of rounding. Percentages shown in parentheses.

Source: Small Business Data Base, Ownership Characteristics Survey, 1984.

ably in nontraditional areas of business. This is reflected on a small scale in construction, manufacturing, and wholesale trade, which minority firms have entered as a result of government incentives.

Finally, minority-owned firms have responded successfully to government incentives to improve their shares of federal prime contracts since 1983. Therefore, their more modest improvement in subcontracting since 1980 may result from a lack of opportunity rather than an inability to compete at that level of procurement.

Table A.7 Number and Percent of Nonfarm Enterprises in the Small Business Data Base by Industry Division and Race of Owner-Operator, 1984

Industry Division	Total ¹	Asian-Operated	Black-Operated	Spanish-Operated	Other
All Nonfarm	383,046 (100.0)	77,601 (100.0)	118,509 (100.0)	130,106 (100.0)	56,830 (100.0)
Agriculture	11,326 (3.0)	470 (0.6)	302 (0.3)	10,319 (7.9)	235 (0.4)
Mining	102 (*)	0 (0.0)	34 (*)	34 (*)	34 (0.1)
Construction	40,029 (10.5)	10,554 (13.6)	6,419 (5.4)	16,604 (12.8)	6,452 (11.4)
Manufacturing	18,149 (4.7)	604 (0.8)	15,496 (13.1)	1,142 (0.9)	907 (1.6)
Transportation	6,687 (1.7)	302 (0.4)	537 (0.4)	5,445 (4.2)	403 (0.7)
Wholesale	14,718 (3.8)	1,209 (1.5)	537 (0.4)	6,486 (5.0)	6,486 (11.4)
Retail	129,231 (33.7)	29,542 (38.1)	22,485 (19.0)	64,736 (49.8)	12,468 (21.9)
Finance	29,005 (7.6)	10,487 (13.5)	15,999 (13.5)	1,310 (1.0)	1,209 (2.1)
Services	133,799 (34.9)	24,433 (31.5)	56,700 (47.8)	24,030 (18.4)	28,636 (50.4)

¹Less than 0.05 percent

²Totals do not include some establishments that could not be classified by type of industry

Note: Estimates derived from a sample of the Small Business Data Base Master Establishment List (MEL) of more than 8.1 million establishments and enterprise records. The MEL is created by matching two commercially available sources, the Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval file, a "Yellow Pages" telephone listing. Estimates of various classifications of data differ slightly because some respondents did not answer questions. Detail may not add to total because of rounding. Percentages shown in parentheses

Source: Small Business Data Base, Ownership Characteristics Survey, 1984

Table A.8 Number and Percent of Enterprises in the Small Business Data Base by SBA Regions and Race of Owner-Operator, 1984

Region ¹	Number					Percent				
	Total	Asian Operated	Black Operated	Spanish Operated	Other	Total	Asian Operated	Black Operated	Spanish Operated	Other
Total	383,045	77,603	118,510	130,103	56,829	100.00	100.00	100.00	100.0	100.0
Region I	6,285	336	5,311	201	437	1.6	4	4.5	2	
Region II ²	40,465	6,385	16,570	11,125	6,385	10.6	8.2	14.0	8.6	11
Region III	39,525	5,915	17,242	5,344	11,024	10.3	7.6	14.6	4.1	19
Region IV	41,809	806	2,250	32,670	6,083	10.9	1.0	1.9	25.1	10
Region V	36,767	6,150	22,754	5,747	2,116	9.6	7.9	19.2	4.4	3
Region VI	67,557	15,664	16,570	28,837	6,486	17.6	20.2	14.0	22.2	11
Region VII	11,360	269	10,588	201	302	3.0	4	8.9	2	
Region VIII	21,915	336	168	10,823	10,588	5.7	4	1	8.3	18
Region IX	105,533	41,138	21,780	34,786	7,829	27.6	53.0	18.4	26.7	13
Region X	11,829	604	5,277	369	5,579	3.1	.8	4.5	3	9

¹The 10 regions of the Small Business Administration are defined as follows

- I Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- II New Jersey, New York
- III Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
- IV Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
- V Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
- VI Arkansas, Louisiana, New Mexico, Oklahoma, Texas
- VII Iowa, Kansas, Missouri, Nebraska
- VIII Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

IX Arizona, California, Hawaii, Nevada
X Alaska, Idaho, Oregon, Washington

²Excludes Puerto Rico

Note Estimates are derived from a sample of the Small Business Data Master Establishment List (MEL) of more than 8.1 million establishments enterprise records. The MEL is created by matching two commercially available sources, the Dun's Market Identifier file from Dun and Bradstreet with the Market Data Retrieval file, a "Yellow Pages" telephone list. Estimates for various classifications of data differ slightly because respondents did not answer all questions.

Detail may not add to total because of rounding

Source: Small Business Data Base, Ownership Characteristics Survey, 1984

Year	Self-Employed Persons		Resident Population		Self-Employed Persons Per 1,000 Persons of Entrepreneurial Age ¹	
	(Thousands) White	(Thousands) Nonwhite	(Thousands) White	(Thousands) Nonwhite	White	Nonwhite
1983	7,072	503	154,574	24,258	46	21
1982	6,788	474	153,093	23,662	44	20
1981	6,616	481	151,503	22,993	44	21
1980	6,539	460	149,695	22,259	44	21
1979	6,353	436	147,682	21,271	43	20
1978	5,997	432	145,311	20,621	41	21
1977	5,721	393	142,917	19,982	40	20
1972	5,034	332	131,021	16,959	38	20

¹Persons of "entrepreneurial age" range from 16 to 90 years

Source: U.S. Department of Commerce, Bureau of the Census, *Preliminary Estimates of the Population of the United States by Age, Sex and Race 1970 to 1981* (Washington, D.C.: Government Printing Office, 1982), Table 2; *idem*, *Estimates of the Population of the United States by Age, Sex and Race 1980 to 1983* (Washington, D.C.: Government Printing Office, 1984), Table 2, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2096, *Labor Force Statistics Derived from the Current Population Survey: A Databook* (Washington, D.C.: Government Printing Office, September 1982), 1:615-31, and *idem*, special tabulations of the Current Population Survey, 1982 and 1983.

Table A.10 Number of Self-Employed Persons Per 1,000 Wage and Salary Workers, 1972, 1977-1983

Year	Self-Employed Persons (Thousands)		Wage-and-Salary Workers (Thousands)		Self-Employed Persons Per 1,000 Employees	
	White	Nonwhite	White	Nonwhite	White	Nonwhite
1983	7,072	503	78,454	11,145	90	45
1982	6,788	474	77,600	10,862	87	44
1981	6,616	481	78,616	10,926	84	44
1980	6,539	460	77,702	10,826	84	42
1979	6,353	436	77,437	10,788	82	40
1978	5,997	432	75,426	10,327	80	42
1977	5,721	393	72,484	9,636	79	41
1972	5,034	332	64,674	8,111	78	41

Source: U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2096, *Labor Force Statistics Derived from the Current Population Survey: A Databook* (Washington, D.C.: Government Printing Office, September 1982), 1:615-31, Table B-16, *idem*, special tabulations of the Current Population Survey, 1982 and 1983.

Table A.11 Characteristics of Self-Employed Workers by Age and Race, 1980

Age	White					Non-White				
	Number (Thousands)	Percent	Average Age	Average Self- Employment Income (Dollars)	Average Wage- & Salary Income (Dollars)	Number (Thousands)	Percent	Average Age	Average Self- Employment Income (Dollars)	Average Wage- & Salary Income (Dollars)
Total	9,612	100.0	43	9,398	10,334	652	100.0	38	7,208	7,793
Less Than 30 Years	1,441	15.0	22	6,465	6,837	117	18.0	22	5,021	5,803
30 to 39 Years	2,161	22.5	34	10,113	11,046	139	21.3	33	8,242	10,068
40 to 49 Years	1,918	20.0	44	11,046	14,674	154	23.6	44	8,150	10,245
50 to 59 Years	2,056	21.4	54	12,204	14,153	124	19.0	54	8,509	9,328
60 to 69 Years	1,407	14.6	64	7,456	8,637	84	12.9	64	6,270	5,973
70 and Over Years	629	6.5	77	3,814	4,011	34	5.2	76	3,822	2,412

Source: Unpublished tabulation of self-employment figures for whites and non whites derived from the 1980 Census of Population 1/1,000 sample

Table A.12 *Characteristics of Self-Employed Workers by Educational Attainment and Race, 1980*

Educational Attainment	White				Non-White					
	Number (Thousands)	Percent	Average Age	Average Self-Employment Income (Dollars)	Average Wage-and-Salary Income (Dollars)	Number (Thousands)	Percent	Average Age	Average Self-Employment Income (Dollars)	Average Wage-and-Salary Income (Dollars)
Total	9,612	100.0	43	9,398	10,334	652	100.0	38	7,208	7,793
Less than High School	2,446	25.5	48	6,822	6,920	257	39.4	41	4,679	5,835
High School Graduate	2,909	30.3	42	8,523	10,221	161	24.7	35	6,636	8,365
Started but did not Complete College	2,012	20.9	36	8,192	10,184	107	16.4	31	7,281	8,404
Completed 4 Years of College	991	10.3	41	10,711	17,216	52	8.0	39	10,222	13,541
Completed More than 4 Years of College	1,254	13.0	41	17,348	18,487	75	11.5	38	14,907	15,037

Source. Unpublished tabulation of self-employment figures for whites and non whites derived from the 1980 Census of Population 1:1,000 sample

ness Investment Companies, FY 1977–FY 1984 (Amounts in Millions of Dollars)

Year	All SBICs		301(d) ¹ SBICs Only		301(d)s as a Percent of Total	
	Number	Amount	Number	Amount	Number	Amount
January–June 1984	1,883	243.9	565	40.5	30.0	16.6
January–June 1983	1,702	238.6	408	27.2	24.0	11.4
1983	3,247	468.8	783	55.9	24.1	11.9
1982	2,941	369.9	764	47.0	26.0	12.7
1981	3,176	387.1	742	54.4	23.4	14.1
1980	2,637	337.4	547	42.2	20.7	12.5
1979	2,698	315.2	441	35.1	16.3	11.1
1978	2,550	264.6	463	32.0	18.2	12.1
1977	2,510	228.9	439	22.6	17.5	9.9

¹ 301(d) SBICs (MCSBICs) are SBICs authorized solely to assist small firms owned and operated by socially or economically disadvantaged persons. These companies can be established industrial or financial concerns, community or business organizations, or private or public investors.

Source: U. S. Small Business Administration, Investment Division.

Table A.14 Federal Prime Contract Actions Over \$10,000 to All Small and Small Minority Business, FY 1982-FY 1983

Agency	FY 1982		FY 1983		Small Minority as a Percent of All Small Business
	Small Business Actions	Small Minority Business Actions	Small Business Actions	Small Minority Business Actions	
	(Thousands of Dollars)	(Thousands of Dollars)	(Thousands of Dollars)	(Thousands of Dollars)	
Total	23,355,024	2,821,384	21,757,837	3,112,401	14.30
Department of Agriculture	885,302	44,080	1,014,224	58,907	5.80
Department of Commerce	53,779	14,338	77,007	19,131	24.84
Department of Defense	18,267,432	1,975,843	16,372,036	2,132,681	13.03
Department of Education	25,827	17,115	29,716	16,947	57.03
Department of Energy	298,936	75,447	299,706	101,661	33.92
Department of Health & Human Services	217,034	62,316	294,608	68,758	24.04
Department of Housing and Urban Development	13,921	8,038	20,005	8,981	44.89
Department of the Interior	463,177	106,052	510,933	106,156	20.77
Department of Justice	53,888	9,617	62,548	13,001	20.78
Department of Labor	67,127	34,801	69,074	26,073	37.74
Department of State	48,449	1,868	44,197	3,949	8.93
Department of Transportation	578,450	93,919	507,844	141,664	27.90
Department of the Treasury	38,731	5,506	75,947	9,468	12.47
Action	1,832	464	1,228	818	66.61
Commodity Futures Trading Commission	116	0	870	453	52.06
Consumer Product Safety Commission	584	418	1,299	526	42.80
Environmental Protection Agency	137,467	17,330	124,094	18,053	14.55

Table A.14 Federal Prime Contract Actions Over \$10,000 to All Small and Small Minority Business, FY 1982-FY 1983—Continued

Agency	FY 1982		FY 1983		Small Minority as a Percent of All Small Business
	Small Business Actions	Small Minority Business Actions	Small Business Actions	Small Minority Business Actions	
	(Thousands of Dollars)	(Thousands of Dollars)	(Thousands of Dollars)	(Thousands of Dollars)	
Equal Employment Opportunity Commission	2,946	113	2,179	272	12.48
Executive Office of the President	2,269	368	2,077	260	12.51
Federal Emergency Management Agency	29,178	4,662	72,924	6,968	9.45
Federal Trade Commission	1,014	131	2,050	368	17.95
General Services Administration	623,414	72,748	563,211	75,975	13.48
International Development Cooperation Agency (AID)	83,755	17,002	77,937	30,104	38.63
Interstate Commerce Commission	609	105	3,898	3,530	90.50
National Aeronautics and Space Administration	362,863	102,652	428,106	119,700	27.96
National Foundation on the Arts and the Humanities	786	348	599	161	26.89

National Gallery of Art	346	-0-	0 00	1,338	0	0 00
National Labor Relations Board	1,326	77	5 80	248	0	0 00
National Mediation Board	1,284	-0-	0 00	1,070	0	0 00
National Science Foundation	2,247	112	4 98	2,945	325	11 04
Nuclear Regulatory Commission	8,465	3,366	39 76	10,849	2,641	24 34
Office of Personnel Management	13,411	169	1 26	17,476	527	3 02
Peace Corps	2,034	879	43 21	5,510	1,100	19 96
Pennsylvania Avenue Development Corporation	4,272	4,098	95 92	1,071	673	62 84
Railroad Retirement Board	2,474	0	0 00	2,300	165	7 17
Securities and Exchange Commission	1,346	115	8 54	1,344	196	14 58
Selective Service System	762	50	6 56	620	0	0 00
Small Business Administration	7,710	3,921	50 85	4,983	2,361	47 38
Smithsonian Institution	13,906	4,167	29 96	12,176	2,198	18 05
Tennessee Valley Authority	506,471	34,197	6 75	361,896	24,997	6 91
United States Arms Control and Disarmament Agency	590	0	0 00	549	0	0 00
United States Information Agency	5,196	214	4 11	9,609	1,255	13 06
Veterans Administration	516,036	98,742	19 13	664,098	111,163	16 74
All Other Agencies	8,262	5,996	72 57	1,448	235	14 64

Notice: Data included for the Department of Defense for Fiscal Year 1983 are for prime contract actions of over \$25,000 rather than over \$10,000.
Source: Federal Procurement Data Center, "Special Report 1226A", July 25, 1981

Table A.15 Federal Prime Contract Actions Over \$10,000 to All Small and Small Minority Business by State of Performance, FY 1983

	FY 1982			FY 1983		
	Small Business Actions	Small Minority Business Actions	Small Minority as a Percent of All Small Business	Small Business Actions	Small Minority Business Actions	Small Minority as a Percent of Small Business
	(Thousands of Dollars)	(Thousands of Dollars)		(Thousands of Dollars)	(Thousands of Dollars)	
U.S. Total	22,695,774	2,779,229	12.24	21,008,103	2,981,035	14.18
Alabama	692,641	54,208	7.82	546,602	77,013	14.08
Alaska	174,487	24,814	14.22	215,556	31,305	14.52
Arizona	232,265	49,204	21.18	250,018	49,959	19.98
Arkansas	140,241	10,491	7.48	149,342	12,471	8.35
California	2,887,223	464,021	16.07	2,927,732	428,409	14.63
Colorado	264,802	47,418	17.91	317,272	61,189	19.28
Connecticut	299,136	36,041	12.05	250,253	22,983	9.18
Delaware	50,268	516	1.03	99,755	1,887	1.89
Washington, D.C.	405,563	116,437	28.70	499,978	158,775	31.75
Florida	676,594	35,502	5.25	754,460	48,768	6.46
Georgia	409,088	48,318	11.81	526,566	85,376	16.21
Hawaii	133,872	80,108	59.83	197,479	111,985	56.70
Idaho	92,850	2,658	2.87	86,545	6,193	7.15
Illinois	465,468	73,666	15.82	523,942	66,151	12.62
Indiana	422,073	40,870	9.68	363,300	58,323	16.05
Iowa	86,529	6,209	7.17	104,394	6,951	6.66
Kansas	154,697	19,321	12.44	116,146	14,403	12.40
Kentucky	179,105	26,823	14.97	303,411	30,697	10.11
Louisiana	366,555	48,301	13.18	266,528	37,399	14.03
Maine	80,278	1,931	2.40	71,766	6,976	9.72
Maryland	788,477	255,023	32.34	971,145	247,176	25.45
Massachusetts	605,577	82,604	13.64	564,051	86,376	15.31

Michigan	491,633	18,199	3 70	475,337	16,357	3 44
Minnesota	139,625	12,261	8 78	171,005	8,415	4 92
Mississippi	243,310	20,337	8 35	194,975	15,965	8 18
Missouri	424,940	35,017	8 24	425,609	34,974	8 21
Montana	95,753	12,332	12 88	93,646	30,115	32 15
Nebraska	106,900	6,849	6 4	154,955	12,405	8 00
Nevada	61,606	25,130	40 79	64,100	22,739	35 47
New Hampshire	34,626	2,074	5 99	44,155	3,801	8 61
New Jersey	688,178	54,303	7 89	593,222	45,635	7 69
New Mexico	195,954	31,470	16 06	198,219	34,496	17 40
New York	1,194,934	173,370	14 51	978 366	94,000	9 60
North Carolina	350,723	26,793	7 64	381,322	51,649	13 54
North Dakota	69,011	15,398	22 31	127,083	66,637	52 43
Ohio	617,835	60,908	9 86	660,440	84,756	12 83
Oklahoma	373,401	33,384	8 94	232,703	44,516	19 12
Oregon	173,500	19,803	11 41	182,837	15,397	8 42
Pennsylvania	770,513	76,399	9 91	869,105	76,624	8 81
Rhode Island	193,545	1,492	77	127,764	6,749	5 28
South Carolina	290,574	36,607	12 60	301,877	50,681	16 78
South Dakota	63,064	10,059	15 95	62,641	14,917	23 81
Tennessee	541,896	47,717	8 81	433,044	14,886	1 43
Texas	2,524,169	255,659	10 13	1,430,934	245,517	17 15
Utah	138,982	15,325	11 03	165,989	14,720	8 86
Vermont	11,133	576	5 17	16,295	1,700	10 43
Virginia	2,076,834	194,054	9 34	1,323,699	248,998	18 81
Washington	443,379	51,348	11 58	454,692	60,112	13 22
West Virginia	66,111	8,530	12 90	82,752	7,108	8 58
Wisconsin	669,407	6,973	1 04	601,408	937	15
Wyoming	36,449	2,378	6 52	53,688	5,464	10 17

Note: Totals differ from those on other tabulations of FY 1982 and FY 1983 prime contract actions because of more recent revisions to the state tabulations are not reflected in earlier agency and product/service tabulations

Source Federal Procurement Data Center, "Special Report SBAMATX"

Table A.16 Federal Prime Contract Actions Over \$10,000 to Small Minority-Owned Business by Product or Service Category, FY 15
FY 1983

Product/Service	Small Minority Business (Thousands of Dollars)		Small Minority as a Percent of All Small Business	
	1982	1983	1982	1983
Total	2,821,384	3,112,401	12.09	14.30
Agriculture	148	22	6.51	15.49
Community Services and Development	33	0	1.89	0.00
Defense Systems	42,778	54,087	13.08	14.55
Defense Other	49,931	32,817	16.57	10.21
Economic Growth and Productivity	-68*	4,149	-5.52	72.94
Education	2,511	1,393	60.10	33.14
Energy	5,854	3,082	17.09	11.10
Environment	1,918	2,299	5.46	7.41
General Services and Technology	3,072	4,451	17.63	18.27
Housing	224	334	84.21	**
Income Security	55	40	25.46	15.38
Internal Affairs and Cooperation	0	0	.00	.00
Medical	12,038	3,711	30.52	10.72
Natural Resources	26	99	.75	.00
Social Services	100		37.88	18.10
Space	4,604	8,372	8.16	13.71
Transportation Modal	1,752	2,057	22.93	39.22
Transportation General	5,657	9,077	25.88	26.78
Transportation Commodity	0	17	25.88	7.05
Mining	704	448	8.80	13.12
Other Research and Development	8,938	9,873	9.85	11.44

Subtotal, Research and Development	140,275	136,328	14.71	13.42
Natural Resources Management	12,102	11,073	13.70	10.04
Social Services	737	1,084	2.15	1.80
Quality Control, Testing and Inspection	2,399	3,916	12.24	14.07
Maintenance, Repairs and Rebuilding of Equipment	49,805	62,497	6.28	7.03
Modification of Equipment	4,418	3,233	9.59	4.13
Technical Representative Services	4,846	6,703	7.82	10.08
Operation of Government-Owned Services	18,268	27,276	21.25	18.52
Installation of Equipment	11,094	8,277	35.90	32.42
Salvage Service	466	2,365	3.40	16.04
General Health Care Services	4,592	318	41.79	5.38
Laboratory Testing Services	137	0	4.43	00
Nursing and Nursing Home Care	528	867	91	1.03
Specialized Medical Services	3,758	10,653	33.56	51.75
Other Medical Services	1,409	1,940	10.26	10.63
Architectural and Engineering Construction Services	23,170	31,727	12.27	14.43
Architectural and Engineering General Services	36,740	44,228	11.64	12.99
Automatic Data Processing	115,677	152,031	48.39	49.90
Management and Professional Services	127,188	200,747	9.31	26.53
Special Studies	45,250	45,147	18.62	20.06
Administrative Support Services	4,886	4,873	99.27	57.32
Management Support Services	27,330	6,634	48.15	47.20
Utilities	1,819	1,395	3.76	12.65
Housekeeping Services	387,477	415,037	48.45	54.35
Photography, Mapping, Printing, and Publishing	23,870	27,946	27.70	35.56
Training Services	33,863	26,434	33.40	25.00
Transportation and Travel	10,878	12,600	4.73	2.52
Lease or Rental of Equipment	21,263	38,717	15.11	18.83
Lease or Rental of Facilities	3,986	596	2.57	1.90
Construction of Structures/Facilities	305,321	446,178	13.39	17.08
Maintenance, Repair, and Alteration of Rental Property	362,793	487,809	15.98	17.21

Table A.16 Federal Prime Contract Actions Over \$10,000 to Small Minority-Owned Business by Product or Service Category, FY 1983—Continued

Product/Service	Small Minority Business (Thousands of Dollars)		Small Minority as a Percent of All Small Business	
	1982	1983	1982	1983
Subtotal, Other Services and Construction	1,646,070	2,082,301	16.80	19.71
Weapons				
Nuclear Ordnance	24,261	65,275	21.47	46.59
Fire Control Equipment	64	5,846	1.77	37.44
Ammunition and Explosives	1,056	2,116	1.46	5.60
Guided Missiles	27,160	17,855	6.57	3.94
Aircraft and Airframe Structural Parts	7,027	4,325	10.10	5.81
Aircraft Components and Accessories	4,675	3,369	4.33	2.58
Aircraft Launching, Landing and Ground Handling Equipment	4,147	6,830	2.67	4.33
Space Vehicles	6,965	6,752	4.86	4.39
Ships, Small Craft, Pontoons and Floating Docks	2,396	812	15.00	4.81
Ship and Marine Equipment	15,543	2,907	4.65	1.47
Railway Equipment	601	2,185	1.13	4.10
Ground Effect and Motor Vehicles, Trailers and Cycles	139	66	9.19	4.26
Tractors	2,579	15,993	61	4.23
Vehicular Equipment Components	61	100	48	1.23
Tires and Tubes	20,810	11,905	11.30	5.57
Engines, Turbines and Components	37	35	11	4.16
Engine Accessories	36,201	8,539	17.21	4.16
Mechanical Power Transmission Equipment	9,191	14,383	10.70	19.35
Bearings	1,417	180	6.70	87
Woodmarking Machinery and Equipment	474	243	2.85	2.73
Metalworking Machinery	0	0	00	00
	175	1,139	.35	2.64

Service and Trade Equipment	139	81	59	52
Special Industrial Machinery	901	2,315	1 77	3 28
Agricultural Machinery and Equipment	51	10	1 15	20
Construction, Mining and Highway Maintenance Equipment	1,675	1,478	4 52	4 56
Materials Handling Equipment	3,366	2,280	4 22	3 13
Rope, Cable, Chain, and Fittings	1,214	649	5 31	3 55
Refrigerating, Air Conditioning and Circulating Equipment	3,959	41	4 76	05
Fire Fighting, Rescue and Safety Equipment	19,264	16,051	15 90	14 04
Pumps and Compressors	1,107	2,023	2 46	5 74
Boilers, Steam Plant and Drying Equipment and Nuclear Reactors	488	378	1 99	2 24
Plumbing, Heating and Sanitation Equipment	1,600	791	5 06	3 26
Water Purification and Sewage Treatment Equipment	37,487	43	76 59	89
Pipe, Tubing, Hose and Fittings	2,361	882	3 30	1 82
Valves	1,200	322	1 39	5 7
Maintenance and Repair Shop Equipment	11,929	4,919	10 26	5 44
Hand Tools	4,909	3,971	11 44	9 84
Measuring Tools	242	68	4 13	1 86
Hardware and Abrasives	3,468	1,007	4 96	2 25
Refabricated Structure and Scaffolding	1,597	6,894	3 48	14 42
Lumber, Millwork, Plywood and Veneer	227	1,169	79	5 66
Construction and Building Materials	2,149	2,104	3 75	2 97
Communication, Detection and Coherent Radiation Equipment	48,540	47,643	8 88	9 87
Electrical/Electronic Equipment Companies	16,004	20,936	5 71	9 26
Fiber Optics Materials, Components, Assemblies and Accessories	0	0	00	00
Electric Wire and Power Distribution Equipment	23,444	14,311	10 30	5 39
Lighting Fixtures and Lamps	371	1,337	.79	2 96
Alarm and Signal Systems	199	55	2 05	40
Medical, Dental and Veterinary Equipment and Supplies	7,118	11,630	5 66	8 40
Instruments and Laboratory Equipment	30,382	27,320	9 68	8 82
Photographic Equipment	259	313	71	67

Table A.16 *Federal Prime Contract Actions Over \$10,000 to Small Minority-Owned Business by Product or Service Category, FY 198.*
FY 1983—Continued

Product/Service	Small Minority Business (Thousands of Dollars)		Small Minority as a Percent of All Small Business	
	1982	1983	1982	1983
Chemicals and Chemical Products	1,333	2,611	1.74	2.87
Training Aids and Devices	22,532	19,416	25.05	20.88
General Purpose ADP (Support) Equipment, Software and Supplies	21,985	70,283	9.09	20.63
Furniture	12,695	6,236	7.48	4.83
Household and Commercial Furnishings and Appliance	2,162	1,291	5.44	3.00
Food Preparation and Serving Equipment	2,296	1,902	4.74	4.05
Office Machines and Visible Record Equipment	822	1,258	5.20	2.92
Office Supplies and Devices	2,474	1,652	5.20	2.92
Books, Maps and Other Publications	1,130	1,149	5.90	6.36
Musical Instruments, Phonographs and Home-type Radios	247	0	11.33	00
Recreational and Athletic Equipment	78	0	1.40	00
Cleaning Equipment and Supplies	294	2,382	1.40	8.47

Brushes, Paints, Sealers and Adhesives	1,975	1,586	5 95	5 23
Containers, Packaging and Packing Supplies	11,303	8,974	10 03	6 89
Textiles, Leather, Furs, Apparel, Shoe Findings, Tents and Flags	139	448	12	26
Clothing, Individual Equipment and Insignia	10,530	45,337	1 58	6 17
Toiletries	318	645	3 45	5 02
Agricultural Supplies	177	155	3 57	3 20
Live Animals	267	14	4 61	72
Subsistence	26,341	22,930	2 45	2 27
Fuel, Lubricants, Oils and Waxes	509,433	333,383	11 56	15 37
Nonmetallic Fabricated Materials	175	72	62	30
Nonmetallic Crude Materials	351	0	15 08	00
Metal Bars, Sheets and Shapes	2,902	2,346	7 80	11 05
Ores, Minerals and Their Primary Products	112	59	1 94	2 43
Miscellaneous	12,339	27,767	12 37	21 90
Subtotal, Supplies and Equipment	1,035,039	893,772	8.21	8.78

Note: Data included for the Department of Defense for Fiscal Year 1983 are for prime contract actions of over \$25,000 rather than over \$10,000

*Deobligation or negative action.

**Recorded data questionable

Source: Federal Procurement Data Center, "Special Report 1274," August 21, 1984.

Table A.17 Subcontracts to Small and Minority-Owned Business by Agency, FY 1980-FY 1983 (Millions of Dollars)

Agency	Small Business					Minority-Owned Business				
	1980	1981	1982	1983		1980	1981	1982	1983	
Department of Agriculture	59.7	76.3	72.4	105.6		5.4	4.7	4.1	5.2	
Department of Commerce	4.2	9.5	5.4	13.8		0.4	2.5	2.0	1.8	
Department of Defense	10,823.7	13,000.0	13,380.0	15,597.8		452.3	554.0	578.4	652.4	
Department of Education	*	5.1	4.0	N/A		*	5.4	1.2	-0-	
Department of Energy	1,432.0	1,504.0	1,626.5	1,860.0		161.2	122.3	131.0	162.5	
Department of Health and Human Services	38.0*	59.7	77.5	89.2		9.1*	7.0	15.9	10.0	
Department of Housing & Urban Development	3.8	3.5	3.9	1.2		0.3	3.5	2.5	7	
Department of the Interior	105.4	34.2	28.8	63.2		15.1	34.2	8.4	3.6	
Department of Justice	**	2.7	1	1		**	2	0	-0-	
Department of Labor	25.7	27.2	36.9	38.1		2.8	6.0	5.6	7.1	
Department of State	0	2.0	3.4	10.4		0.0	13.1	8	-0-	
Department of Transportation	60.6	71.0	146.0	111.6		25.6	26.0	26.0	33.4	
Department of the Treasury	2	3	1.5	2.7		**	3	3	1.9	
Environmental Protection Agency	6.0	4.6	24.7	12.1		2.1	3.2	1.5	2.1	
Federal Emergency Management Agency	0.7	N/A	6	5		0.1	.8	.1	1	

General Services Administration	215.0	638.6	384.9	977.7	11.6	15.0	12.9	38.5
International Development Cooperation Agency								
(AID)	3.9	3	6	9	0.0	3	1	**
National Aeronautics and Space Administration	430.9	474.9	523.4	664.9	42.9	50.7	54.9	68.4
National Science Foundation	14.1	13.1	12.1	13.9	5	13.1	4	8
Nuclear Regulatory Commission	0	5	2.2	1.3	0			
Office of Personnel Management	***	3	0	0	***	0	0	-0
Pennsylvania Avenue Development Corporation	0	3	0	0	0	0	0	0
Tennessee Valley Authority	39.2	***	6.9	9.5	10.9	18.8	7.0	1.4
Veterans' Administration	56.8	***	133.9	169.7	7.8	29.4	9.4	20.4
total	13,319.9	15,928.1	16,475.8	19,744.2	748.2	910.5	862.7	1,010.3

NA = Not Available

Note: Detail may not add to total because of rounding. Total represents data for listed agencies.

*Data for the Department of Education are included with the data for the Department of Health and Human Services.

**Less than \$50,000

***FY 1980 Office of Personnel Management data were omitted due to the nature of the subcontract data.

****No subcontracting data were reported for all small business for FY 1981.

Source: Data are based on individual reports of the Office of Procurement Assistance, U. S. Small Business Administration.

Procurement

Synopsis

Nineteen eighty-four was an important year for new federal procurement legislation and regulations which replaced or strengthened existing requirements. New regulations took effect early in 1984, complemented by the enactment of procurement statutes that will have a major impact on the government-wide procurement process. The new legislative and regulatory actions promise greater opportunities for the small business sector in competing for government contracts in the next few years by simplifying the procurement process.

The small business share of total government procurement declined in FY 1983, both as a percentage of the total purchases of goods and services and in absolute dollar volume. However, the small firm experience with most procurement centers has been, on balance, positive over the past five years. Since FY 1979, the small firm share of actions over \$10,000 has increased in one-half of the major purchasing organizations.

Public Law 97-219 requires the 12 federal agencies with extramural R&D obligations of \$100 million or more to establish a Small Business Innovation Research (SBIR) program. Phase I awards average up to \$50,000; the most promising ideas are embodied in second phase awards averaging up to \$500,000. Where appropriate, there is a third phase in which commercial applications are developed using private capital; this phase may also involve government production contracts. The program calls for SBIR awards to total 1.25 percent of extramural R&D obligations by the fourth year in civilian agencies and by the fifth year in the Department of Defense.

Total SBIR awards exceeded \$44 million in FY 1983, were \$110 million in FY 1984, and will be almost \$200 million in FY 1985. The FY 1983 and FY 1984 solicitations resulted in 16,623 proposals and 1,742 Phase I awards. The number of Phase II awards is expected to be about 50 percent of the number of Phase I awards. Overall, the SBIR program has stimulated high quality proposals and research.

Introduction

The U.S. Government has been buying goods and services for more than 200 years. However, federal programs to assist small businesses in selling goods and services in this endeavor are a recent phenomenon. In 1942, programs were established to assist smaller manufacturing firms in obtaining government contracts to supply materials for the war effort. Since that time,

expanded to include virtually all federal agencies. In addition to procurement assistance programs for small businesses, a number of programs emerged that improved working conditions and favored domestic firms and minority segments of the business population. These programs are aimed at helping labor surplus firms, minority-owned businesses, veterans, women, and handicapped entrepreneurs, which compete with each other for a share of total federal procurement. In total, approximately 45,000 to 50,000 individual firms have competed successfully for a share of the Federal Government market.¹

**Federal
Procurement:
Fiscal Year 1983**

In Fiscal Year (FY) 1983, the Federal Government purchased about \$170.1 billion in goods and services.² Nearly 29 percent of this amount (\$49 billion) went to small businesses, of which \$29 billion was provided through prime contracts directly between small businesses and the purchasing agency. The remaining \$20 billion was through subcontracts, whereby small firms work with other prime contractors.³ Minority-owned businesses account for a small, growing segment of the federal contracts market, totaling \$3.2 billion in awards in FY 1983, twice the level five years ago.⁴

In FY 1983, the dollar threshold for reporting detailed information on Department of Defense (DOD) procurement actions increased from over \$10,000 to over \$25,000.⁵ The DOD reported details on actions of over \$25,000 for FY 1983, while civilian agencies continued to report actions over \$10,000. Accordingly, prime contract actions are understated for FY 1983 in comparison with previous years; data for FY 1982 and prior years reflect actions over \$10,000.

¹Research Dimensions, Inc., *An Analysis of Smaller Firm Participation in Federal Contracting, FY 1981*, Office of Advocacy, U.S. Small Business Administration, Award No. SBA-6048-OA-82.

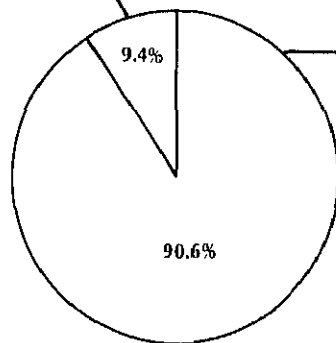
²Federal Procurement Data Center, Standard Report, April 1, 1984 and Special Report 1226A, July 26, 1984, Department of Defense, Report No. PO3, Prime Contract Awards.

³Based on data collected by the Office of Procurement Assistance, U.S. Small Business Administration, as reported by selected agencies and departments.

⁴Federal Procurement Data Center, Special Report 1226A, July 26, 1984.

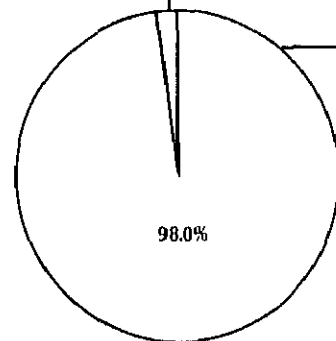
⁵Section XXI—Procurement Management Reporting System, Section 21-102(b), Defense Acquisition Regulation, Department of Defense, 1983 DAC 76-46, August 24, 1983.

Actions of \$10,000 or Less



Total Procurement Dollars
\$168.2 Billion

Actions Over \$10,000
2.0%



Total Procurement Actions
21,189,144

Source: Federal Procurement Data Center, Standard Report, April 1, 1984

Size of Federal Contract Actions

Government purchasing activities are characterized by a relatively small number of large purchases. In FY 1983, actions of over \$10,000 accounted for nearly 91 percent of the total dollar volume for the year (Chart B.1).⁶ This

⁶The nomenclature used in a discussion of Federal Government procurement data is contract actions, which differ from initial contract awards because an initial contract may involve more than one contract action. A modification to an original contract award is a separate action, for example, and may involve the obligation or deobligation of funds.

	Total	Small Business Contracts	Small Business Share (Percent)
Actions Over \$10,000	\$154,206,228	\$21,757,837	14.1
Actions Under \$10,000	15,861,846	7,199,936	45.4
Total	170,068,074	28,957,773	17.0

Source: Federal Procurement Data Center, Special Report 1226A, July 26, 1984, and *Federal Procurement Data System Standard Report, Fiscal Year 1983 Fourth Quarter*, April 1, 1984, and Department of Defense, *Department of Defense Prime Contract Awards, Fiscal Year 1983*.

amount, however, represented only 2 percent of all actions. Also influencing this imbalance is the Federal Government's frequent requirement to earmark large outlays for special efforts, such as national defense and space exploration.

Small firms are most successful in competing for smaller awards. Small firms, for example, were awarded slightly over 45 percent of the dollar volume of awards under \$10,000 in FY 1983 (Table B.1). In contrast, small firms accounted for only 14 percent of awards in excess of \$10,000.

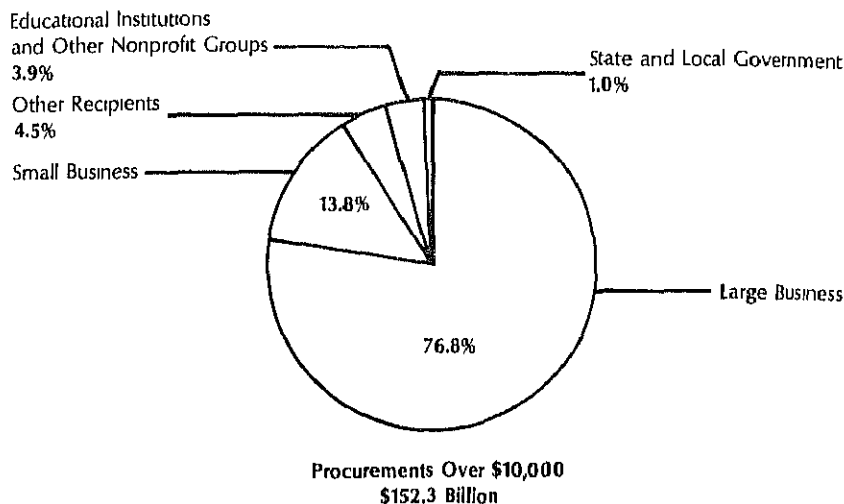
Distribution of Prime Contract Actions

Over three-fourths of the dollars in awards over \$10,000 go to large businesses. Small business received nearly 14 percent (Chart B.2).⁷ The contracts awarded to nonprofit institutions amounted to \$5.9 billion in FY 1983 and comprise nearly 4 percent of all federal procurement actions in excess of \$10,000. The group that comprises the "other recipients" category includes purchases from outside the United States.

Methods of Procurement

A substantial portion of procurement dollars over and under \$10,000 is awarded under a noncompetitive negotiated method of procurement, whereby the Govern-

⁷The small business share referenced here and in Chart B.2 is based upon data provided in FPDC Standard Report of April 1, 1984 for awards in excess of \$10,000. These figures are not comparable to the small business share (\$29 billion and 17 percent) mentioned previously in this section because the latter figures are based on awards from FPDS Special Report 1226A and adjusted for civilian actions of less than \$10,000 and Department of Defense actions of less than \$25,000.



Note: Small firms are defined here as firms with fewer than 500 employees.

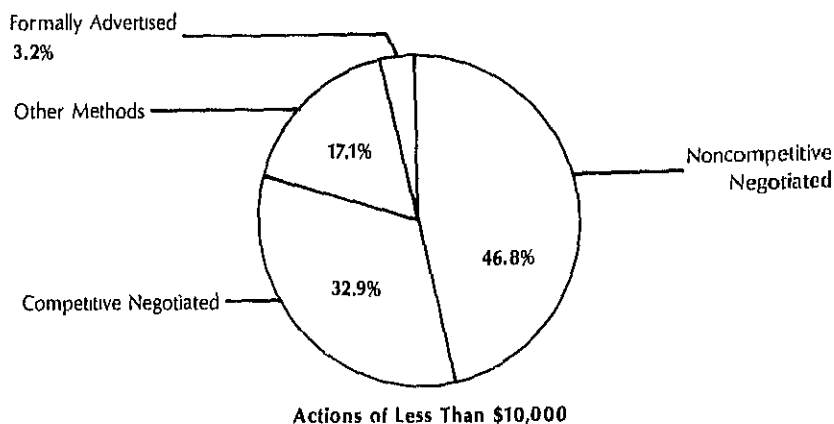
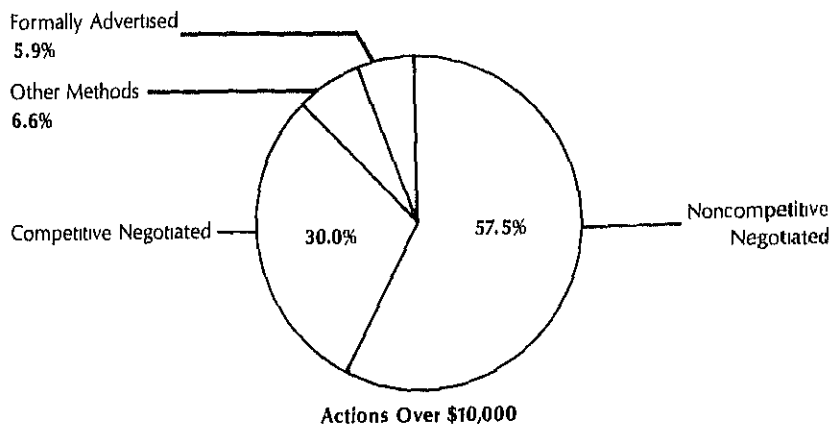
Source: Federal Procurement Data Center, Standard Report, April 1, 1984

ment solicits an offer from a single source (Chart B.3). Competitive negotiated procurements require that both a technical and cost proposal be submitted in response to a solicitation. Although the competitive negotiated process is obviously a greater cost burden to a small business, it does offer small firms the opportunity to demonstrate their capabilities in both technical and cost effectiveness.

Trends in Small Business Procurement

The small business share of federal procurement expenditures decreased in FY 1983. Contract actions of \$10,000 and over totaled \$154.2 billion for FY 1983, an increase of 1.4 percent over the previous year and the lowest increase in the dollar volume of these awards since FY 1979.⁸ Small firms accounted for \$21.8 billion of all federal contract actions over \$10,000 in FY 1983, or 14.1 percent of the total (Table B.2). Although the small business share of these awards has been relatively stable since FY 1979, the FY 1983 level of \$21.8 billion

⁸Historical procurement data exist in the most accurate and detailed form only for prime-contract awards of \$10,000 and over. With the exception, noted earlier in this section, of the \$25,000 reporting threshold for the DOD in FY 1983, subsequent discussions of the small business share of government procurement will be based on



Source: Federal Procurement Data Center, Standard Report, April 1, 1984

represents the first decrease in absolute dollar volume in the small business sector since the FY 1979 benchmark.

A large part of the apparent decrease in the small business percentage can be attributed to the shift in DOD reporting requirements. Based on Federal Procurement Data Center figures for the past five years, it is estimated

awards in excess of \$10,000. Because prime contract awards also include awards to non-business institutions such as universities and other nonprofit organizations, the relative shares of prime contract dollars to small business may not coincide with the percentages developed by the individual agencies and departments for other reporting purposes

\$10,000 (Thousands of Dollars)

Fiscal Year	Total	Small Business Contracts	Small Business Share (Percent)
1983	\$154,206,228	\$21,757,837	14.1
1982	152,037,586	23,355,024	15.4
1981	128,576,831	19,827,900	15.4
1980	100,797,468	15,293,945	15.2
1979	88,207,804	13,969,946	15.8

Source: Federal Procurement Data Center, Special Report 1226A, July 26, 1984

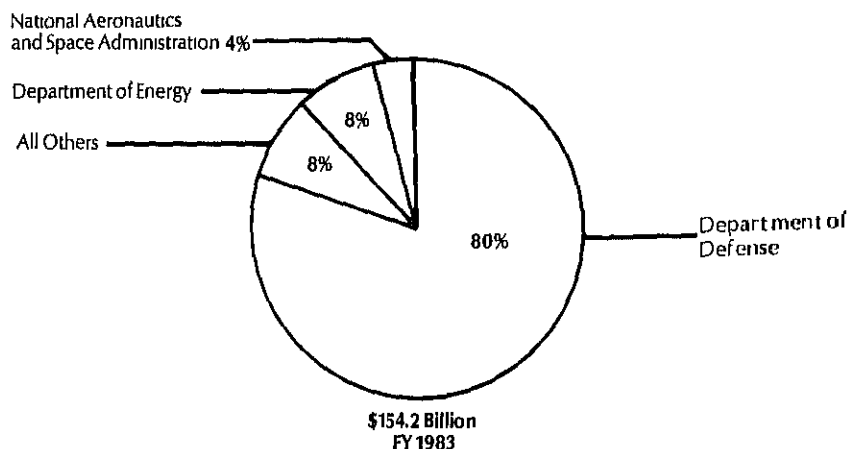
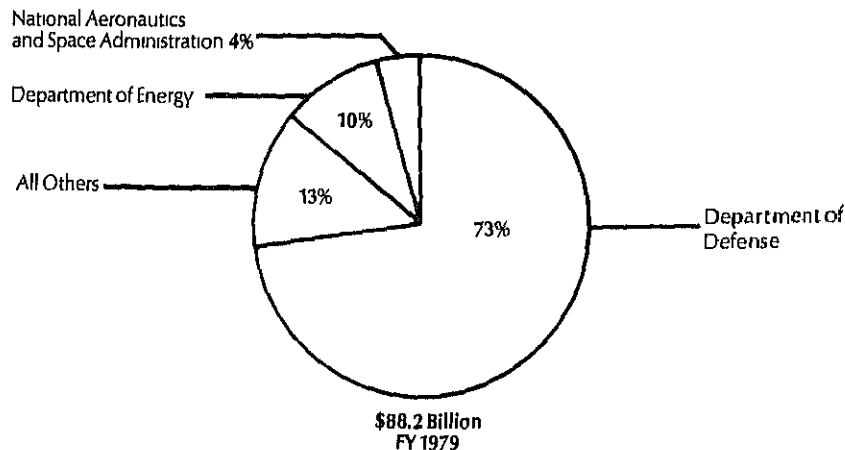
that approximately \$2 to \$3 billion in actions between \$10,000 and \$25,000 is not included in the DOD figures for FY 1983. Of these totals, an estimated \$1 billion in prime contract awards to small firms is excluded from the data.

However, despite the statistical change in DOD reporting requirements from FY 1982 to FY 1983, it is clear that there was no increase in DOD purchases from small business in FY 1983. This was undoubtedly due to the changing mix of procurements in FY 1983, with large amounts committed to the procurement of major systems. This type of procurement has not traditionally been linked with small business vendors.

The DOD and two civilian agencies make up the core of purchasing power in federal procurement (Table B.3). In FY 1983, the DOD accounted for 80 percent of all prime contract dollars in awards over \$10,000, followed by the Department of Energy (8 percent) and the National Aeronautics and Space Administration (4 percent). The remaining agencies and departments combined accounted for 8 percent of the dollar volume of all prime contract actions (Chart B.4).

From FY 1979 to FY 1983, the dollar volume of prime contract actions over \$10,000 increased 75 percent in the aggregate for agencies and departments. In the same period, the dollar volume for the DOD grew 92 percent. Thus, the importance of the DOD has grown perceptibly from 73 percent of the total prime contract dollars in FY 1979 to 80 percent in FY 1983.

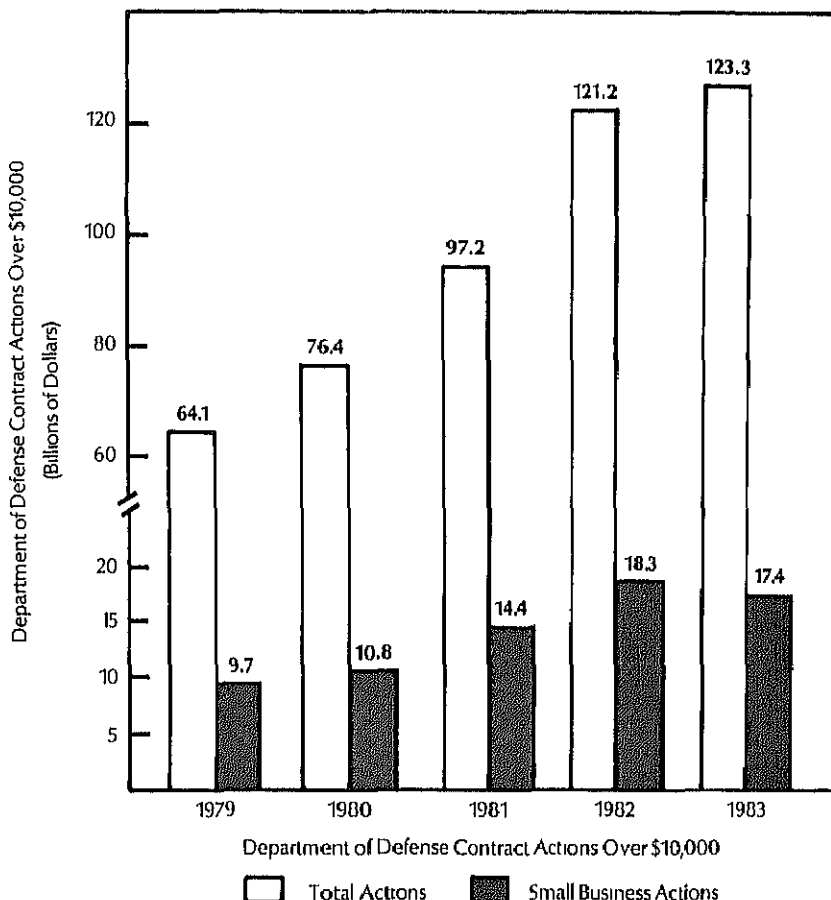
The small business share of DOD procurement has generally kept pace with the overall growth in DOD procurement (Chart B.5). Prime contract actions in the



Source: Federal Procurement Data Center, Special Report 1226A, July 24, 1984

DOD grew by an average annual rate of nearly 30 percent from FY 1979 through FY 1982 and by just under 2 percent from FY 1982 to FY 1983. In comparison, the small firm share of DOD awards also grew at an average annual rate of 30 percent from FY 1979 through FY 1982, but declined 10 percent over the FY 1982-FY 1983 period.

In the 30 major procurement departments and agencies of the Federal Government, the small business sector accounted for more than one-fourth of the FY 1983 prime



Note: \$17.4 billion in small business actions in FY 1983 is an estimate. See footnote 7, *supra*.
 Source: Federal Procurement Data Center, Special Report 1226A, July 24, 1984.

contract dollar volume. Since FY 1979, the small business share of these awards has increased in one-half of the major purchasing organizations.

Prime Contract Actions by Major Product/Service Sectors

The purchases of the various agencies and departments encompass a myriad of goods and services, from sophisticated weapons systems to the more mundane requirements of military base maintenance and general housekeeping services (Chart B.6). Over one-half (54 percent) of the dollar volume of these awards is allocated

Table B.3 *Small Business Share of Contract Actions Over \$10,000 by Agency, FY 1979-FY 1983*

Agency*	Contract Actions Over \$10,000 FY 1983 (Thousands of Dollars)		Small Business Share (Percent)				
	Total	Small Business	FY 1983	FY 1982	FY 1981	FY 1980	FY 1979
Total	154,206,228	21,757,837	14.11	15.36	15.42	15.17	15.15
Department of Agriculture	1,834,737	1,014,224	55.28	58.24	55.68	57.63	57.37
Department of Commerce	205,429	77,007	37.49	36.97	39.82	43.42	40.15
Department of Defense**	123,300,980	16,372,026	13.28	15.07	14.78	14.19	15.15
Department of Education¹	139,688	29,716	21.27	18.85	23.54	17.82	12.12
Department of Energy	12,269,252	299,706	2.44	2.15	3.36	3.91	5.35
Department of Health and Human Services	989,222	294,608	29.78	31.45	23.31	21.29	22.22
Department of Housing and Urban Development	41,884	20,005	47.76	35.70	25.82	22.28	32.32
Department of the Interior	1,438,210	510,933	35.53	38.47	29.39	32.97	33.33
Department of Justice	209,288	62,548	29.89	33.25	28.55	27.02	25.25
Department of Labor	377,972	69,074	18.28	18.55	13.79	19.50	25.17
Department of State	154,604	44,197	28.59	37.40	28.16	26.74	17.17
Department of Transportation	1,244,043	507,844	40.82	53.86	40.57	30.46	25.25
Department of the Treasury	358,598	75,947	21.18	8.55	13.40	10.81	6.66
Environmental Protection Agency	365,423	124,094	33.69	37.91	38.91	39.92	37.37
Equal Employment Opportunity Commission	22,348	2,179	9.75	12.95	6.41	11.53	1.11

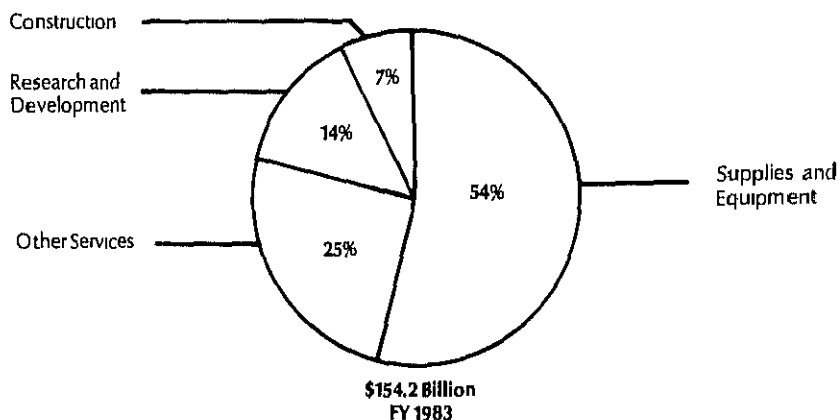
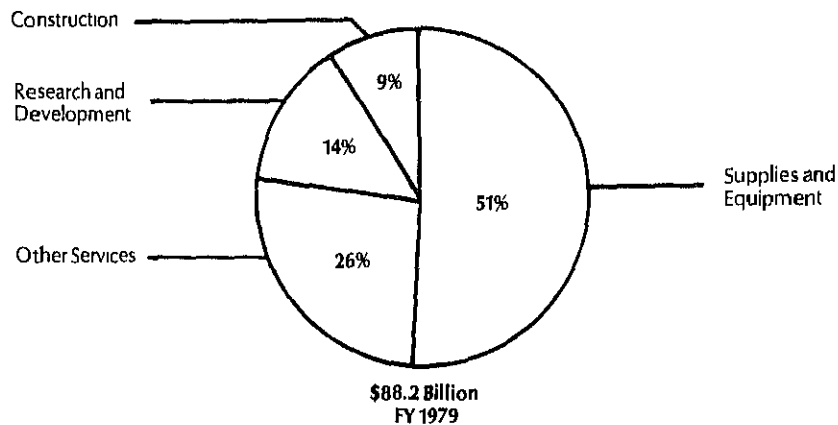
Executive Office of the President	11,317	2,077	18 35	23 51	39 91	30 10	12
Federal Emergency Management Agency	618,578	72,924	11 79	18 17	20 82	25 99	30
General Services Administration	1,207,801	563,211	46.63	36 09	37 16	31 81	38
International Development Cooperation Agency (AID)	253,161	77,937	30 79	37 20	34 50	26 56	28
National Aeronautics and Space Administration	6,147,381	428,106	6 96	6 82	7 03	7 26	7
National Science Foundation	152,665	2,945	1 93	1 40	1 88	2 80	3
Nuclear Regulatory Commission	41,055	10,849	26 43	19 95	36 22	42 73	36
Office of Personnel Management	278,865	17,476	6 27	6 43	1 91	3 30	2
Peace Corps ²	10,777	5,510	51 13	35 89	---	---	---
Pennsylvania Avenue Development Corporation	11,067	1,071	9 68	30 58	54 02	76 01	50
Small Business Administration	11,830	4,983	42 12	43 64	46 77	68 59	45
Smithsonian Institution	28,039	12,176	43.43	73.21	66 59	58 12	57
Tennessee Valley Authority	715,642	361,896	50.57	46 45	48 76	22 96	16
United States Information Agency	40,612	9,609	23 66	29.89	22 31	31.50	18
Veterans Administration	1,682,456	664,098	39.47	38 55	43.28	35 00	42
All Other Agencies	43,304	18,861	43 55	41.22	41 01	39 77	37

¹ Although the Department of Education was not formally approved until October 17, 1979, the data are separated through FY 1979 to establish a continuum until December 29, 1981, the Peace Corps was a part of Action (not shown in table)

² Although a total of 58 agencies or departments are represented in the table for FY 1983, the 30 specific organizations listed represent only those agencies or departments which awarded at least \$10 million in prime contract actions in FY 1983.

** For DOD, the data include contract actions of \$25,000 and over for FY 1983.

Source: Federal Procurement Data Center, Special Report 1226A, July 26, 1984



Source: Federal Procurement Data Center, Special Report 1274, August 21, 1984

for the acquisition of supplies and equipment, followed by other services (25 percent) and research and development (14 percent), and construction (7 percent).

Since FY 1979, awards for supplies and equipment grew more rapidly than either of the remaining three categories. The FY 1983 expenditures for supplies and equipment represent an increase of nearly 87 percent over the FY 1979 level. For the same period, research and development (R&D) awards increased 70 percent, other services increased 67 percent, and construction increased 39 percent (Table B.4).

Table B.5 *Small Firms' Actions by Type of Product or Service, FY 1979 and FY 1983 (Thousands of Dollars)*

	FY 1979	FY 1983	Percent Change in Dollars FY 1979-FY 1983
Research and Development			
Total	12,791,686	21,697,405	69.6
Small Business	848,263	1,015,494	19.7
Percent of Total	6.63	4.68	—
Construction			
Total	7,547,642	10,460,545	38.6
Small Business	3,600,932	5,446,464	51.2
Percent of Total	47.71	52.07	—
Other Services			
Total	23,249,461	38,791,524	66.85
Small Business	3,038,878	5,116,933	68.38
Percent of Total	13.07	13.19	—
Supplies and Equipment			
Total	44,619,015	83,256,754	86.6
Small Business	6,475,873	10,178,946	57.2
Percent of Total	14.51	12.23	—

Source: Federal Procurement Data Center, Special Report 1274, August 21, 1984

Awards to small firms have kept pace only in the sector providing construction and other services. The small firm share in the remaining two categories declined slightly over the FY 1979-FY 1983 period. In R&D, the dollar volume of prime contract awards to small firms grew 20 percent from FY 1979 to FY 1983, while the total sector grew 70 percent. Thus, the small firm share decreased by nearly 2 percentage points. Similarly, small firms did not fare well in the procurement of supplies and equipment, where awards to small businesses grew at a rate of one-third less than the sector aggregate. As a result, the small business share of this market decreased slightly more than 2 percentage points over the period. In construction, small firms managed to increase their share over the past five years, from 48 to 52 percent of federal contracts.

*Prime Contract
Actions by
Product/Service
Category*

Table B.5 presents the small firm share of prime contract actions for product and service categories in detail for each year since FY 1979. The data in the table show that small firms were more successful in obtaining larger shares of prime contract dollars for supplies, equipment,

Table B.5 Small Business Share of Contract Actions Over \$10,000 by Product or Service, FY 1979–FY 1983

Product or Service	Contract Actions Over \$10,000 FY 1983 (Thousands of Dollars)		Small Business Share (Percent)				
	Total	Small Business	FY 1983	FY 1982	FY 1981	FY 1980	FY 1979
Total	154,206,228	21,757,837	14.11	15.36	15.42	15.17	15.83
Agriculture	6,321	142	2.25	21.87	15.23	21.84	3.36
Community Services and Development	5,104	599	11.74	20.67	16.20	26.41	50.39
Defense Systems	11,843,073	314	2.94	3.70	3.77	4.30	
Defense Other	1,797,808	321,569	17.89	15.13	16.31	20.00	18.98
Economic Growth and Productivity	15,959	5,688	35.64	7.23	5.74	6.54	5.70
Education	28,569	4,203	14.71	17.09	4.20	9.46	10.10
Energy	918,030	27,757	3.02	3.84	4.95	8.61	9.91
Environment	134,858	31,005	22.99	22.85	22.05	37.60	30.33
General Science and Technology	226,238	24,368	10.77	10.28	5.33	6.30	5.96
Housing	591	331	56.01	129.13	6.56	88	27.36
Income Security	1,066	260	24.39	82.13	28.76	19.47	15.78
International Affairs and Cooperation	1,154	—	—	12.02	15.02	4.90	2.94
Medical	275,082	34,628	12.59	12.03	10.71	8.03	7.49
Natural Resources	13,706	2,437	17.71	13.18	24.79	44.95	22.61
Social Services	652	547	83.90	100.00	6.65	—	19.69
Space	5,072,908	61,084	1.20	1.35	1.76	2.13	2.10
Transportation	103,060	39,381	38.21	35.95	35.19	41.34	20.07
Mining	6,620	3,415	51.59	45.34	33.69	46.13	33.71
Other Research and Development	1,246,606	86,274	6.92	8.71	6.72	9.36	12.12

Subtotal, Research and Development	21,697,405	1,015,494	4.68	4.75	5.90	6.75	6.63
Purchase of Structure and Facilities	3,646	166	4.55	—	—	—	—
Natural Resources Management	199,034	110,313	55.42	71.30	26.85	32.37	22.00
Social Services	507,212	60,256	11.88	10.24	1.99	4.22	1.33
Quality Control, Testing and Inspection of	167,786	27,842	16.59	14.69	30.26	10.23	7.19
Maintenance, Repair and Rebuilding of							
Equipment	4,539,084	889,107	19.59	15.47	20.12	18.26	21.15
Modification of Equipment	1,2108,392	78,298	6.48	4.81	9.51	2.90	2.48
Technical Representative Services	796,546	66510	8.35	9.01	8.93	7.32	7.91
Operation of Government-Owned							
Facilities							
Installation of Equipment	12,115,851	147,308	1.22	73	96	87	56
Salvage Service	284,301	25,531	8.98	13.64	15.13	29.32	31.70
Dependent Medicare Service	24,486	14,743	60.21	66.96	72.27	50.54	52.80
General Health Care Services	47,241	—	—	—	—	—	—
Laboratory Testing Services	169,616	5,908	3.48	3.15	12.04	19.67	36.59
Nursing and Nursing Home Care	11,868	3,014	25.40	28.09	20.35	34.66	33.77
Specialized Medical Services	128,013	84,216	65.79	66.86	66.89	72.72	73.52
Other Medical Services	41,108	20,587	50.08	35.17	35.03	37.64	45.47
Architect and Engineer Services	64,082	18,258	28.49	19.50	33.91	23.84	12.65
Automatic Data Processing Services	2,168,251	560,373	25.84	27.76	29.74	25.87	21.20
Management and Professional Services	1,448,691	304,648	21.03	20.73	20.17	23.14	21.11
Special Studies and Analyses	4,294,857	756,586	17.62	31.97	19.09	15.74	17.12
Administrative Support Services	842,364	225,036	26.71	29.19	29.13	29.43	27.83
Management Support Services ⁴	12,832	8,502	66.26	99.78	—	—	—
Utilities	177,009	14,056	7.94	13.51	21.55	—	—
Housekeeping Services	3,827,130	11,024	.29	1.17	24	.23	26
Photography, Mapping, Printing and	1,007,478	763,707	75.80	77.97	73.99	77.01	76.42
Publishing Services							
Training Services	192,443	78,583	40.83	51.21	41.53	40.81	41.00
Transportation and Travel	631,744	105,718	16.73	17.55	41.77	12.96	16.35
	2,733,351	499,672	18.28	8.69	13.16	18.42	25.58

Table B.5 Small Business Share of Contract Actions Over \$10,000 by Product or Service, FY 1979-FY 1983

Product or Service	Contract Actions Over \$10,000 FY 1983 (Thousands of Dollars)		Small Business Share (Percent)				
	Total	Small Business	FY 1983	FY 1982	FY 1981	FY 1980	FY 1979
Total	154,206,228	21,757,837	14.11	15.36	15.42	15.17	15.83
Agriculture	6,321	142	2.25	21.87	15.23	21.84	3.36
Community Services and Development	5,104	599	11.74	20.67	16.20	26.41	50.39
Defense Systems	11,843,073	3,14	2.94	3.70	3.77	4.30	
Defense Other	1,797,808	321,569	17.89	15.13	16.31	20.00	18.98
Economic Growth and Productivity	15,959	5,688	35.64	7.23	5.74	6.54	5.70
Education	28,569	4,203	14.71	17.09	4.20	9.46	10.10
Energy	918,030	27,757	3.02	3.84	4.95	8.61	9.91
Environment	134,858	31,005	22.99	22.85	22.05	37.60	30.33
General Science and Technology	226,238	24,368	10.77	10.28	5.33	6.30	5.96
Housing	591	331	56.01	129.13	6.56	88	27.36
Income Security	1,066	260	24.39	82.13	28.76	19.47	15.78
International Affairs and Cooperation	1,154	—	—	12.02	15.02	4.90	2.94
Medical	275,082	34,628	12.59	12.03	10.71	8.03	7.49
Natural Resources	13,706	2,427	17.71	13.18	24.79	44.95	22.61
Social Services	652	547	83.90	100.00	6.65	--	19.69
Space	5,072,908	61,084	1.20	1.35	1.76	2.13	2.10
Transportation	103,060	39,381	38.21	35.95	35.19	41.34	20.07
Mining	6,620	3,415	51.59	45.34	33.69	46.13	33.71
Other Research and Development	1,246,606	86,274	6.92	8.71	6.72	9.36	12.12

Subtotal, Research and Development					6.63
Purchase of Structure and Facilities	3,646	1,015,494	4.68	4.75	5.90
Natural Resources Management	199,034	110,313	4.55	—	—
Social Services	50,212	60,256	35.42	71.30	26.85
Quality Control, Testing and Inspection	167,786	27,842	11.88	10.24	1.33
Maintenance, Repair and Rebuilding of Equipment	4,539,084	889,107	16.59	14.69	7.39
Modification of Equipment	1,2108,392	78,298	19.59	15.47	21.15
Technical Representative Services	796,546	66510	6.48	4.81	2.48
Operation of Government-Owned Facilities	12,115,851	147,308	8.35	9.01	7.91
Installation of Equipment	284,301	25,531	1.22	73	96
Salvage Service	24,486	14,743	8.98	13.64	15.13
Dependent Medicare Service	47,241	—	60.21	66.96	72.27
General Health Care Services	169,616	5,908	3.48	3.15	—
Laboratory Testing Services	11,868	3,014	25.40	28.09	12.04
Nursing and Nursing Home Care	128,013	84,216	65.79	66.86	20.35
Specialized Medical Services	41,108	20,587	50.08	35.17	66.89
Other Medical Services	64,082	18,258	28.49	19.50	35.03
Architect and Engineer Services	2,168,251	560,373	25.84	27.76	33.91
Automatic Data Processing Services	1,448,691	304,648	21.03	20.73	29.74
Management and Professional Services	4,294,857	756,586	17.62	31.97	20.17
Special Studies and Analyses	842,364	225,036	26.71	29.19	21.11
Administrative Support Services	12,832	8,502	66.26	99.78	15.74
Management Support Services	177,009	14,056	7.94	13.51	23.84
Utilities	3,827,130	11,024	.29	1.17	25.87
Housekeeping Services	1,007,478	763,707	75.80	77.97	23.14
Photography, Mapping, Printing and Publishing Services	192,443	78,583	40.83	51.21	21.11
Training Services	631,744	105,718	16.73	17.55	15.74
Transportation and Travel	2,733,351	499,672	18.28	8.69	19.09
					27.83
					—
					—
					26
					76.42
					41.00
					16.35
					25.58

Table B.5 Small Business Share of Contract Actions Over \$10,000 by Product or Service, FY 1979-FY 1983—Continued

Product or Service	Contract Actions Over \$10,000 FY 1983 (Thousands of Dollars)		Small Business Share (Percent)				
	Total	Small Business	FY 1983	FY 1982	FY 1981	FY 1980	FY 1979
Lease or Rental of Equipment	951,649	205,609	21.61	13.20	19.66	15.69	17.6-
Lease or Rental of Facilities	195,459	31,362	16.05	43.55	46.57	54.86	47.71
Construction of Structures and Facilities	6,366,795	2,612,698	41.04	32.40	32.55	33.10	41.71
Maintenance, Repair and Alteration of Real Property	4,093,750	2,833,766	69.22	64.67	68.55	67.39	63.11
Subtotal, Construction and Other Services	49,252,069	10,563,397	21.45	20.00	21.02	20.39	21.56
Weapons	1,485,146	140,096	9.43	7.42	13.47	14.43	23.48
Nuclear Ordnance	46,766	15,616	33.39	3.51	3.10	43	27
Fire Control Equipment	1,532,923	37,758	2.46	4.56	4.78	4.70	6.06
Ammunition and Explosives	2,379,906	453,489	19.05	13.83	15.98	14.81	17.62
Guided Missiles	7,009,933	74,499	1.06	1.20	1.11	1.38	2.38
Aircraft and Airframe Structural Parts	14,942,008	130,614	87	97	1.14	1.41	1.55
Aircraft Components and Accessories	2,778,251	157,658	5.67	10.92	8.83	12.76	14.27
Aircraft Launching, Landing and Ground Handling Equipment	348,118	153,677	44.15	40.93	49.19	66.32	59.17
Space Vehicles	1,245,304	16,870	1.35	1.64	1.94	1.58	40
Ships, Small Craft, Pontoons and Floating Docks	7,510,702	198,396	2.64	7.05	8.00	2.52	1.05
Ship and Marine Equipment	221,232	53,350	24.11	26.43	55.25	49.22	51.63
Railway Equipment	3,293	1,549	47.04	9.59	40.55	17.97	42.43
Ground Effect and Motor Vehicles, Trailers and Cycles	2,957,069	378,134	12.79	15.76	8.99	6.75	9.85
Tractors	58,116	8,137	13.99	61.66	19.21	16.82	11.50

Vehicular Equipment Components	1,130,637	213,596	18 89	13 58	14 36	29 72	21
Tires and Tubes	93,856	25,155	26 80	34 11	25 70	28 94	1
Engines, Turbines and Components	5,165,586	205,110	3 97	3 88	2 20	2 34	
Engine Accessories	515,826	74,338	14 41	16 25	12 04	9 30	1
Mechanical Power Transmission Equipment	112,244	20,735	18 47	23 96	20 15	36 01	21
Bearings	78,833	8,893	11 28	14 30	10 07	13 10	1
Woodworking Machinery and Equipment	970	767	79 07	68 89	42 45	26 42	71
Metalworking Machinery	83,467	43,146	51 69	75 58	15 57	15 67	1
Service and Trade Equipment	30,862	15,710	50 90	64 37	58 75	56 96	4
Special Industrial Machinery	292,495	70,493	24 10	4 85	25 45	15 52	1
Agricultural Machinery and Equipment	8,245	4,883	59 22	60 92	57 07	49 63	6
Construction, Mining and Highway							
Maintenance Equipment	310,637	32,440	10 44	28 16	34 22	40 98	21
Materials Handling Equipment	250,143	72,788	29 10	25 92	28 14	30 83	31
Rope, Cable, Chain and Fittings	31,735	18,304	57 68	61 10	50 04	50 73	50
Refrigerating and Air Conditioning and Circulating Equipment	129,628	78,372	60 46	50 43	49 76	41 83	25
Fire Fighting, Rescue and Safety Equipment	220,058	114,323	51 95	44 91	41 83	51 83	53
Pumps and Compressors	201,806	35,273	17 48	21 25	26 37	23 62	24
Furnace, Steam Plant and Drying Equipment and Nuclear Reactors	1,318,311	16,892	1 28	1 34	6 11	9 01	3
Plumbing, Heating and Sanitation Equipment	32,450	24,229	74 67	74 92	66 31	61 49	56
Water Purification and Sewage Treatment Equipment	12,117	4,857	40 58	79 78	66 68	55 35	48
Pipe, Tubing, Hose and Fittings	3,523	48,363	1,372 78	38 95	38 53	37 28	60
Valves	129,897	56,321	43 36	48 31	47 12	46 10	37
Maintenance and Repair Shop Equipment	675,999	90,382	13 37	18 44	23 88	18 09	20
Hand Tools	68,507	40,375	58 94	53 30	49 20	45 67	52
Measuring Tools	7,724	3,662	47 41	62 73	77 29	45 98	34

Table B.5 Small Business Share of Contract Actions Over \$10,000 by Product or Service, FY 1979-FY 1983--Continued

Product or Service	Contract Actions Over \$10,000 FY 1983 (Thousands of Dollars)		Small Business Share (Percent)				
	Total	Small Business	FY 1983	FY 1982	FY 1981	FY 1980	FY 1979
Hardware and Abrasives	109,217	44,783	41 00	37 58	47 51	40 43	45 45
Prefabricated Structure and Scaffolding	156,980	47,821	30 46	27 63	60 32	42 37	44 79
Lumber, Millwork, Plywood and Veneer	29,990	20,642	68 83	76 09	73 21	71 69	77 72
Construction and Building Materials	110,342	70,852	64 21	48 69	49 98	35 59	51 94
Communication, Detection and Coherent Radiation Equipment	8,965,088	482,599	5 38	7 10	6 32	7 40	9 65
Electrical/Electronic Equipment Components	1,739,907	226,049	12 99	17 50	15 97	22 04	21 27
Fiber Optics Materials, Components, Assemblies and Accessories	7,323	924	12 62	37 48	10 72	—	—
Electric Wire and Power Distribution Equipment	714,871	265,584	37 15	34 44	37 19	24 97	11 56
Lighting Fixtures and Lamps	76,972	45,224	58 75	52 88	50 09	50 27	58 11
Alarm and Signal Systems	66,640	13,648	20 48	32 21	33 67	51 47	35 80
Medical, Dental and Veterinary Equipment and Supplies	749,956	138,434	18 46	16 94	19 91	15 08	17 39
Instruments and Laboratory Equipment	1,590,233	309,659	19 47	17 99	18 80	21 85	21 56
Photographic Equipment	160,338	46,837	29 21	17 15	14 13	17 73	17 82
Chemicals and Chemical Products	142,284	90,825	63 83	50 40	50 72	43 52	37 75
Training Aids and Devices	726,152	92,973	12 80	14 18	14 52	11 66	17 43
General Purpose ADP (Support) Equipment, Software and Supplies	1,598,476	340,614	21 31	20 83	19 73	21 99	16 39
Furniture	207,268	129,073	62 27	53 63	45 27	37 03	26 30
Household and Commercial Furnishings and Appliances	86,926	43,104	49 59	45 46	51 40	57 67	51 90

Food Preparation and Serving Equipment	76,735	46,919	61 14	55 34	64 42	56 26	32 85
Office Machines and Visible Record Equipment	108,490	34,704	31 99	27 63	11 09	14 39	13 82
Office Supplies and Devices	165,748	56,501	34 09	30 15	21 71	38 57	40 26
Books, Maps and Other Publications	106,137	18,056	17 01	26 55	20 02	24 69	14 25
Musical Instruments, Phonographs and Musical Instruments	1,758	933	53 07	57 87	32 52	25 08	33 89
Hometype Radios	7,416	3,967	53 49	52 55	42 30	43 49	51 55
Recreational and Athletic Equipment	76,726	28,137	36 67	24 18	21 26	37 64	22 99
Cleaning Equipment and Supplies	49,354	30,325	61 44	58 56	49 52	34 96	55 34
Brushes, Paints, Sealers and Adhesives							
Containers, Packaging and Packing Supplies	192,850	130,300	67 57	60 39	58 22	60 49	52 02
Textiles, Leather, Furs, Apparel and Shoe Findings, Tents and Flags	209,965	170,512	81 21	56 96	49 66	56 54	69 21
Clothing, Individual Equipment and Insignia	854,824	734,817	85 96	83 95	82 59	79 83	69 92
Toiletries	58,955	12,857	21 81	14 72	18 62	2 26	22 48
Agricultural Supplies	13,440	4,838	36.00	43 61	45 19	42 95	57 01
Live Animals	2,888	1,944	67 31	76 31	69 41	55 82	75 05
Subsistence	2,325,996	1,009,111	43 38	40 52	41 67	44 22	46 49
Fuel, Lubricants, Oils and Waxes	7,423,575	2,168,967	29 22	29 55	20 66	19 14	30 92
Nonmetallic Fabricated Materials	57,744	23,970	41 51	39 02	45 32	30 97	34 33
Nonmetallic Crude Materials	91,984	2,761	3 00	59 08	69 08	27 48	8 73
Metal Bars, Sheets and Shapes	141,613	21,228	14 99	26 00	17 83	19 52	15 62
Ores, Minerals and Their Primary Products	28,276	2,430	8 59	36 03	40 29	5 62	37 10
Miscellaneous	598,944	126,774	21 17	8 34	19 83	23 22	13 23
Subtotal, Supplies and Equipment	83,256,754	10,178,946	12.23	15.19	14.27	13.96	14.51

Source: Federal Procurement Data Center, Special Report 1274, August 21, 1984.

competing for research and development procurements. In FY 1983, over one-half of research and development expenditures were allocated to defense systems, and an additional one-fourth were applied toward space technologies.

*Prime Contract
Actions by State*

The small business share of federal prime contract dollars is presented on a state-by-state basis for FY 1983 in Table B 6, and is detailed further by major product/service category for each state in Table B 7. As an added dimension for general comparative purposes, the small business share of total state employment is included in Table B 6 as well. Of the data presented in the two tables, the most prominent aspect of small business performance is its ability to win a higher percentage of construction awards than other major product/service categories, a fact that is consistent throughout the state data. Because these data are only for establishments in the 50 states and the District of Columbia, the small business percentages are greater, particularly for construction.

*Subcontracting to
Small Business*

Table B.8 contains data on the performance of selected federal agencies reporting subcontract awards for FYs 1981, 1982, and 1983. Data are available only from agencies that project a total procurement volume exceeding \$10 million per year. In addition, the figures reflect awards for prime contracts in excess of \$500,000, except for construction awards, which include only those actions exceeding \$1 million.

Many smaller firms prefer subcontracting work because the bulk of the burdens created by government paperwork and other administrative requirements fall on the shoulders of prime contractors. On the other hand, small firms risk being displaced during tight economic periods when prime contractors tend to do the subcontracting portions themselves. Despite the pitfalls of subcontracting, small firms have registered increases in virtually all agencies reporting such data.

Recent Legislation

Nineteen eighty-four was a significant year for procurement policy. Legislation and regulations that had been in effect for many years were changed. The new Federal Acquisition Regulation (FAR), which governs procurement procedures government-wide, took effect on April 1, 1984. Three procurement statutes relevant to small businesses were enacted: the Competition in Contracting

... 1985, the FY 1985 Department of Defense Authorization Act (P. L. 98-525), and the Small Business and Federal Procurement Competition Enhancement Act of 1984 (P. L. 98-577)

Competition in Contracting Act

Many features of this statute were proposed by the Office of Federal Procurement Policy as long ago as 1980. Some of the significant procedural changes made by this statute are

- Putting the formally advertised and negotiated methods of procurement on a level of equal preference, with no requirement for contracting offices to make determinations and findings to justify use of negotiation;

- Limiting the use of noncompetitive procurement methods to seven circumstances, each requiring justification and authorization by progressively higher levels (depending on the size of the contract) in the procuring agency;

- Lowering the contract dollar threshold for a contractor to provide certified cost and pricing data from \$500,000 to \$100,000;

- Providing special rules for resolving bid protests and contractual disputes involving automated data processing equipment;

- Instituting an advocate for competition in each executive agency; and

- Recognizing by law the General Accounting Office (GAO) authority to resolve bid protests and strengthening its enforcement power to establish mandatory time deadlines, require contracting agencies to stop contract award or performance until bid protests are resolved, and recommend remedies such as award of attorney fees

Fiscal Year 1985 Department of Defense Authorization Act

Also known as the Defense Procurement Reform Act of 1984, Title XII of the FY 1985 Department of Defense Authorization Act was enacted to control the abuses in spare parts pricing that have received public attention in recent months and to introduce more competition into the federal procurement process. Generally helpful to small contractors, some of the reforms include:

- Imposing new requirements for planning for procurement of supplies and future competition;

- Improving procurement procedures, including designation of an advocate for competition, and es-

Table B.6 Small Business Share of Prime Contract Actions and State Employment by Principal Place of Contract Performance: Selected Years

	Total Prime Contract Actions (Thousands of Dollars - FY 1983)	Rank	Small Business Share (Percent)			Total State Employment, 1982	Small Business Share (Percent)	
			FY 1983	FY 1982	FY 1980		1982	1980
Totals	143,277,361		14.66	16.58	16.34	87,832,343	51.06	50.16
Alabama	\$1,374,129	27	39.78	49.31	40.32	1,133,648	50.21	47.46
Alaska	495,534	39	43.50	36.94	33.26	154,570	58.66	56.65
Arizona	1,726,454	24	14.48	12.37	14.77	855,259	56.03	54.26
Arkansas	726,640	33	20.55	22.68	23.40	771,583	50.30	48.67
California	30,887,811	1	9.48	10.38	12.56	9,367,519	54.15	52.67
Colorado	2,111,120	18	15.03	14.36	14.19	1,352,091	51.25	48.24
Connecticut	5,511,481	8	4.54	4.36	5.06	1,464,076	47.97	46.28
Delaware	231,105	45	43.16	16.17	16.49	175,794	59.62	58.41
D.C.	1,463,951	26	34.15	23.76	27.36	498,005	50.73	48.29
Florida	5,777,055	7	13.06	13.60	18.25	3,584,010	60.36	57.25
Georgia	2,659,663	14	19.80	21.76	28.80	2,200,007	47.49	46.08
Hawaii	535,571	37	36.87	27.42	25.09	401,285	52.65	50.83
Idaho	386,207	42	22.41	22.07	18.74	264,848	56.46	54.44
Illinois	2,225,584	16	23.54	22.39	18.73	5,131,025	46.67	45.44
Indiana	2,257,831	17	16.09	19.54	12.75	2,019,548	46.00	43.71
Iowa	521,071	38	20.03	20.06	20.07	989,376	50.66	50.85
Kansas	1,678,119	25	6.92	10.03	11.48	891,891	55.48	53.88
Kentucky	874,299	32	34.70	26.92	50.18	1,143,111	47.75	46.01
Louisiana	1,866,228	22	14.28	12.15	17.10	1,481,226	55.22	52.04
Maine	436,566	40	16.44	9.86	11.91	396,227	54.80	54.01
Maryland	5,564,100	9	17.45	18.88	22.35	1,458,439	53.60	52.00
Massachusetts	6,443,230	5	8.75	10.19	12.17	2,517,793	49.64	48.83

Michigan	1,940,848	20	24 49	26 38	20 85	3,130,393	50 11	50 63
Minnesota	1,789,990	23	9 55	8 67	13.82	1,565,283	56 06	56 38
Mississippi	1,953,511	19	9 98	16 46	15 90	727,301	52 08	50 85
Missouri	6,311,374	6	6 74	6 77	7 58	1,968,529	49 27	48 18
Montana	145,088	49	64.54	71 86	78 70	229,145	66 77	61 18
Nebraska	321,921	44	48 13	42 14	39 50	637,470	52 20	52 28
Nevada	736,451	34	8 70	10 91	15 85	377 182	44 69	43 96
New Hampshire	576,876	35	7 65	6 43	11 05	365,008	59 24	58 10
New Jersey	3,111,407	13	19 07	20 74	24 37	3,071,414	54 12	51 70
New Mexico	1,935,717	21	10 24	9 34	10 56	441,684	50 08	48 27
New York	9,700,792	2	10 09	12 50	15 42	7,044,457	55 54	53 88
North Carolina	932,155	30	40 91	33 71	33 14	2,001,895	50 38	49 01
North Dakota	199,152	47	63 81	61 80	66 58	207,408	65 26	66 70
Ohio	4,463,604	11	14 80	14 07	14 50	4,224,218	46 21	44 29
Oklahoma	653,796	36	35 59	42 61	35 64	1,173,202	55 51	54 13
Oregon	414,554	43	44 10	41 87	34 97	933,449	57.02	56 33
Pennsylvania	4,088,073	12	21 26	19 19	17 76	4,723,727	49 06	48 44
Rhode Island	405,672	41	31 49	48 57	34 30	398,461	57 24	56 52
South Carolina	1,292,073	28	23 36	24 50	28.23	1,094,984	46 47	44 65
South Dakota	120,849	50	51 83	54 40	46.15	205,912	62 54	61 01
Tennessee	2,714,290	15	13 95	19 84	14 68	1,788,577	44 85	44 30
Texas	8,165,749	3	17.52	27.54	11 19	6,385,219	51 35	48 78
Utah	883,934	31	18 78	13 76	28 29	509,001	53.71	52 94
Vermont	195,937	46	8 32	5 19	8 02	163,997	64 85	65.21
Virginia	7,965,671	4	16.62	31 51	22 04	1,863,006	49.25	47 73
Washington	5,218,995	10	8.71	10.93	11 24	1,403,132	54 94	53 13
West Virginia	190,874	48	43.35	35 05	20.53	558,970	47 81	48 02
Wisconsin	1,012,296	29	59.41	61 17	45 45	1,990,783	51.10	50 25
Wyoming	81,963	51	65.50	32 56	34 65	173,206	64 75	64 06

Sources: Federal contract actions by states are based upon a special tabulation compiled for the U.S. Small Business Administration by the Federal Procurement Data Center, November 1984. State employment data provided by U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table B.7 Small Business Share of Prime Contract Actions by Principal Place of Performance and Major Product or Service Category, 1983 (Thousands of Dollars)

	Total Prime Contract Actions		Research and Development		Construction		Other Services		Supplies and Equipment	
	Total	Small Business Share	Total	Small Business Share	Total	Small Business Share	Total	Small Business Share	Total	Small Business Share
Totals	143,277,361	14.66	21,511,108	4.68	8,256,278	64.55	35,474,743	14.05	78,035,232	12.41
Alabama	1,374,129	39.78	221,155	16.47	167,733	62.64	489,109	25.39	496,132	56.62
Alaska	495,534	43.50	9,096	8.91	166,082	93.46	230,717	18.58	89,639	18.38
Arizona	1,726,454	14.48	179,958	3.26	249,446	57.24	317,855	13.90	979,195	5.84
Arkansas	726,640	20.55	4,823	74.58	127,591	58.92	138,393	11.78	455,833	11.91
California	30,887,811	9.48	7,871,968	3.54	1,231,467	62.41	5,457,858	13.09	16,326,518	~ 14
Colorado	2,111,120	15.03	661,777	1.14	220,064	60.50	953,059	8.29	276,225	35.33
Connecticut	5,511,481	4.54	426,531	1.87	34,534	77.22	611,285	5.71	4,439,131	4.07
Delaware	231,105	43.16	4,451	1.01	12,881	87.04	20,644	22.28	193,129	43.44
District of Columbia	1,463,951	34.15	69,400	18.51	92,979	82.51	1,090,922	31.98	210,650	29.18
Florida	5,777,055	13.06	1,032,135	2.27	305,898	63.40	1,218,653	19.07	3,220,369	9.46
Georgia	2,659,663	19.80	64,886	1.02	328,237	79.73	420,934	21.68	1,845,606	9.37
Hawaii	535,571	36.87	18,463	2.43	150,398	81.78	194,705	29.92	172,005	9.17
Idaho	386,207	22.41	1,460	23.22	61,625	83.52	298,290	6.94	24,832	56.54
Illinois	2,225,584	23.54	80,544	21.88	191,087	65.29	677,342	12.32	1,276,611	23.35
Indiana	2,257,831	16.09	45,429	3.51	56,367	86.99	162,041	15.01	1,993,994	14.46
Iowa	521,071	20.03	29,848	0.05	22,322	93.84	117,632	2.13	351,269	21.61
Kansas	1,678,119	6.92	227,190	0.52	69,843	76.73	201,152	11.16	1,179,934	3.30
Kentucky	874,299	34.70	4,436	4.26	102,235	84.04	337,716	9.68	429,912	42.94
Louisiana	1,866,228	14.28	334,599	0.16	274,434	44.34	471,298	10.48	~85,897	12.08
Maine	436,566	16.44	5,815	25.18	54,423	48.25	133,920	14.57	242,408	10.12
Maryland	5,564,100	17.45	853,142	7.10	291,850	57.51	2,224,994	19.26	2,194,114	14.32
Massachusetts	6,443,230	8.75	1,613,150	6.91	84,091	91.88	1,022,012	8.96	3,723,977	7.62

Michigan	1,940,848	24 49	181,540	10.92	103,455	73 95	205,081	28 50	1,450,772	22 09
Minnesota	1,789,990	9 55	198,268	0 94	41,794	65 05	196,028	10 93	1,353,900	8 90
Mississippi	1,953,511	9 98	6,067	8 04	198,113	42 50	258,427	14 19	1,480,904	4 87
Missouri	6,311,374	6 74	539,699	0 28	177,525	56 55	1,036,631	6 62	4,557,519	5 60
Montana	145,088	64 54	1,042	16 51	91,227	53 76	29,573	53 34	23,246	123 29
Nebraska	321 921	48 13	10,968	5 11	57,566	78 87	69,845	22 82	183,542	50 69
Nevada	736,451	8 70	135,940	0 10	46,110	85 65	498,248	4 17	56,153	6 60
New Hampshire	576,876	7 65	68,558	5 21	17,102	98 03	52,658	20 91	438,528	2 92
New Jersey	3,111,407	19 07	665,446	3 54	129,782	68 24	479,197	22 74	1,836,982	20 26
New Mexico	1,935,717	10 24	158,499	20 86	189,571	56 89	1 551,404	2 85	36,243	35 92
New York	9,700,792	10 09	917,477	4 54	175,165	69 29	2,922,076	6 00	5,686 074	11 26
North Carolina	932,155	40 91	78,854	2 54	165,998	82 66	249,210	19 97	438,093	43 90
North Dakota	199,152	63 81	22,358	3 26	59,379	75 16	41,755	18 77	75,660	97 66
Ohio	4,463,604	14 80	411,413	10 93	254,214	53 98	1,032,183	9 29	2,755,794	13 68
Oklahoma	653,796	35 59	10,579	17 91	145,220	60 01	256,557	25 44	241,440	32 47
Oregon	414,554	44 10	12,307	8 87	142,188	39 71	115,296	59 35	144,763	39 38
Pennsylvania	4,088,073	21 26	563,980	6 25	192,178	46 41	508,985	30 07	2,822,930	20 96
Rhode Island	405,672	31 49	57,965	1 22	23,245	99 85	105,519	31 57	218,943	32 22
South Carolina	1,292,849	23 36	13,212	1 18	140,466	83 53	947,651	8 31	190,744	55 40
South Dakota	120,849	51 83	1,322	22 54	36,549	82 98	47,808	19 40	35,170	64 65
Tennessee	2,714,290	13 95	161,827	2 83	247,521	33 25	1,835,660	3 54	469,282	59 93
Texas	8,165,749	17 52	786,927	5 23	521,457	58 67	1,873,869	20 52	4,873,496	14 03
Utah	883,934	18 78	517,609	0 53	74,331	79 62	132,762	35 37	159,232	35 86
Vermont	195,937	8 32	8,333	2 99	2,633	99 35	10,935	35 86	174,036	5 46
Virginia	7,965,671	16 62	633,382	22 80	291,010	76 05	2,636,185	24 39	4,405,094	7 15
Washington	5,218,995	8 71	1 556,137	1 52	293,328	72 62	1,411,807	6 38	1,957,723	6 53
West Virginia	190,874	43 35	2,765	12 84	53,196	82 78	57,209	15 04	77,704	38 29
Wisconsin	1,012,296	58 41	26,634	9 88	27,550	73 51	95,733	25 32	862,379	64 27
Wyoming	81,963	65 50	1,714	3 79	52,818	83 79	15,920	42 59	11,511	22 48

Sources Federal contract actions by states are based upon a special tabulation compiled for the U S Small Business Administration by the Federal Procurement Data Center, November 1984 State employment data provided by U S Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data

Table B.8 *Subcontracts to Small and Minority-Owned Business by Agency, FY 1981—FY 1983 (Millions of Dollars)*

	Small Business			Minority-Owned Business		
	FY 1981	FY 1982	FY 1983	FY 1981	FY 1982	FY 1983
Department of Agriculture	76.3	72.4	105.6	4.7	4.1	5.2
Department of Commerce	9.5	5.4	13.8	2.5	2.0	1.8
Department of Defense	13,000.0	13,380.0	15,597.8	554.0	578.4	652.4
Department of Education	5.1	4.0	NA	5.4	1.2	NA
Department of Energy	1,504.0	1,626.5	1,860.0	122.3	131.0	162.5
Department of Health and Human Services	59.7	77.5	89.2	7.0	15.9	10.0
Department of Housing and Urban Development	3.5	3.9	1.2	3.5	2.5	0.7
Department of the Interior	34.2	28.8	63.2	34.2	8.4	3.6
Department of Justice	2.7	1	1	2	0.0	0.0
Department of Labor	27.2	36.9	38.1	6.0	5.6	7.1
Department of State	2.0	3.4	10.4	13.1	.8	0
Department of Transportation	71.0	145.0	111.6	26.0	26.0	33.4
Department of the Treasury	0.3	1.5	2.7	0.3	0.3	1.9
Environmental Protection Agency	4.6	24.7	12.1	3.2	1.5	2.1

Federal Emergency Management Agency	**	6	5	7 8	1	1
General Services Administration	638 6	384 9	977.7	15 0	12 9	38 5
International Development Cooperation Agency (AID)	3	6	9	3	1	0 05
National Aeronautics and Space Administration	474 9	523 4	664 9	50 7	54 9	68 4
National Science Foundation	13 1	12 1	13 9	13 1	4	8
Nuclear Regulatory Commission	5	2 2	1 3	0	2	0
Office of Personnel Management	3	0	0	0	0	0 04
Pennsylvania Avenue Development Corporation	3	0	0	*	0	0
Tennessee Valley Authority	**	6 9	9 5	18 8	2 0	1 4
Veterans Administration	**	133 9	169 7	29 4	9 4	20 4
All Others	--	--	2 9	--	--	0 ~

Note * Data not received in time for inclusion in this report

** No subcontracting data were reported for all small business for FY 1981

NA = Not Available

Sources. Data are based upon individual reports to the U.S. Small Business Administration, Office of Procurement Assistance

product lists;

Authorizing regulations to govern allocation of government and contractor rights in technical data delivered under contracts funded by the Federal Government; and

Validating contractors' claims of proprietary rights on data

*The Small
Business and
Federal
Procurement
Competition
Enhancement Act
of 1984*

The spare parts reform statute is aimed at enhancing small business participation in federal procurement, particularly in spare part contracts. This act contains provisions almost identical to those in the FY 1985 Department of Defense Authorization Act and makes these provisions apply to federal civilian agencies. In addition, the following provisions were added:

Requiring federal procurement regulations, procedures, policies, and forms to be subject to a notice-and-comment period before taking effect, if they would have a "significant effect beyond the internal operating procedures of the agency," or would have a "significant cost or administrative impact on contractors." This provision is the "other law" which triggers applicability of the Regulatory Flexibility Act (5 U.S.C. Section 601 *et seq* , P.L. 96-354) to the affected federal procurement regulations.

Imposing special requirements for price negotiation of noncompetitively obtained items. These changes include specifying the incurred overhead a contractor may allocate to such items and requiring the contractor to identify items it did not manufacture or to which it did not contribute significant value.

Assigning the SBA Breakout Procurement Center Representatives (BO/PCR) to all "major procurement centers," defined as those DOD centers that awarded contracts for items other than commercial items totaling at least \$150 million in the preceding fiscal year, and such other procurement centers as designated by the SBA Administrator

Among other duties, BO/PCRs are authorized to attend provisioning and other evaluation conferences, where decisions are made about how spare parts for major systems will be acquired and to evaluate restrictions on competition and make recom-

eliminated BO/PCRs may also obtain enough government-owned data to allow a contracting agency to issue a competitive solicitation and to review unsolicited engineering proposals to determine whether the implementation of these ideas would result in lower costs to the Government.

*Small Business
Innovation
Research*

The Small Business Innovation Development Act of 1982 (Public Law 97-219) required each federal agency with extramural R&D obligations of \$100 million or more to establish a Small Business Innovation Research (SBIR) program, beginning with FY 1983. Responding to R&D topics developed by the agencies, small firms with the best proposals receive awards averaging up to \$50,000 for a first phase for determining, insofar as possible, the scientific and technical merit and feasibility of ideas.

The most promising ideas are embodied in subsequent awards averaging up to \$500,000 for a second phase to further develop the proposed ideas to meet the particular program needs. The funding of these ideas takes into consideration the scientific and technical merit and feasibility evidenced by the first phase. Where two or more proposals are evaluated as being of approximately equal scientific and technical merit and feasibility, special consideration is given to those proposals that have nonfederal capital commitments for a third phase. Total SBIR awards exceeded \$44 million in FY 1983, were \$110 million in FY 1984, and will be almost \$200 million in FY 1985.

Where appropriate, there is a third phase in which nonfederal capital pursues commercial applications of the research or research and development and which may also involve follow-on production contracts with a federal agency, not using SBIR funds, for products or processes intended for use by the United States Government.

The extramural R&D obligations that trigger the establishment of an SBIR program also determine the size of the program. Civilian agencies begin at 0.2 percent of extramural R&D obligations, increasing to 0.6 percent the second year, 1.0 percent the third year, and 1.25 percent thereafter. The Department of Defense (DOD) began at 0.1 percent the first year, increasing to 0.3 percent the second year, 0.5 percent the third year, 1.0 percent the fourth year, and 1.25 percent thereafter.

In determining extramural R&D obligations as a base for the size of the SBIR programs, the act provided a

agement and Budget (OMB) Circular No. A-11 on the "Preparation and Submission of Budget Estimates," which is the basis of total R&D obligations given in "Special Analysis K: Research and Development" in *The Budget of the United States Government*. The agencies subsequently submit to the National Science Foundation (NSF) breakdowns of total R&D obligations into intramural and extramural R&D obligations, which are published in *Federal Funds for Research and Development*, now in its thirty-third year of publication.

The breakdowns of total R&D obligations into intramural and extramural R&D obligations are given in Tables B.9 through B.11 for Fiscal Years 1983, 1984, and 1985. It should be noted that these figures reflect a three-year cycle: the FY 1985 figures are initial estimates, the FY 1984 figures reflect Congressional appropriations, and the FY 1983 figures are actual obligations.

The extramural R&D obligations in Tables B.9 through B.11 provide the basis for the calculations by the Small Business Administration (SBA) of the required SBIR program sizes in Tables B.12 through B.14 for the three fiscal years, with three exclusions from the base of extramural R&D obligations. For the Agency for International Development, it does not include amounts obligated solely for general institutional support of international research centers or for grants to foreign countries. This exclusion has thus far prevented the Agency for International Development from establishing an SBIR program. The second exclusion is 10 percent for intelligence R&D by the DOD. The third exclusion is the atomic energy defense programs of the Department of Energy (DOE), which agrees with the SBA that the exclusion comprises naval reactor development, as well as defense programs (atomic energy defense activities). The excluded DOE extramural R&D obligations are:

FY 1983	\$1,660,595,000
FY 1984	\$1,920,819,000
FY 1985	\$2,137,120,000

Finally, Tables B.12 through B.14 show SBIR appropriations for the National Aeronautics and Space Administration, which are greater than the requirements of the act.

The agency awards given in Tables B.12 through B.14 exclude awards by other agency technical programs in response to SBIR proposals and exclude expenditures for

SBIR program support (e.g., outreach), because they do not meet the intent of the act, in the judgment of the SBA, even though they are with small business concerns specifically in connection with a small business innovation research program which meets the requirements of the Small Business Innovation Development Act of 1982. In the case of the National Science Foundation, such amounts are

FY 1983	\$327,000
FY 1984	\$133,450
FY 1985	\$150,000

Because of the three-year cycle in estimating extramural R&D obligations, and consequent changes in the SBIR base, differences between SBIR requirements and awards are to be expected. For this reason, the best way to ensure that requirements are met is to maintain a simple system of surpluses and deficits to be made up in later years (Tables B.12 through B.14). In this way, the SBIR programs can proceed on the basis of the best available estimates and ultimately agree with the percentages (specified by the act) of the final figures for extramural R&D obligations.

In FY 1983, the DOD and the NSF had substantial surpluses because of Phase II awards from preceding programs. Beginning with FY 1984, the DOD has taken the position that not all of the R&D obligations reported by the DOD to the OMB and the NSF should be included in the SBIR base. The SBA calculates that the FY 1983 surplus (\$5.2 million) was 57 percent of the FY 1984 deficit (\$9.1 million) and the FY 1985 deficit will be \$35.6 million; discussions between the DOD and the SBA are continuing on this matter.

As projected by the SBA, the Department of Transportation (DOT) will be the only agency with a deficit for each of the three fiscal years, although it is one of the agencies whose FY 1985 estimated funding of awards reflects Congressional appropriations, while the estimated required funding, being an initial estimate, does not. Beginning with FY 1984, the DOT wishes to revise the data on extramural (but not total) R&D obligations it has submitted to the NSF. This matter will be resolved by the DOT and the NSF.

The Department of Education became the eleventh SBIR agency during the course of FY 1983. In spite of the late start, the Department finished the year with a 55-

Table B.9 Federal Agencies with Research and Development Obligations of \$10 Million or More, FY 1983 Actual

	Obligations (Thousands of Dollars)			Percent Extramural
	Total	Intramural	Extramural	
total	38,711,537	10,581,919	28,129,618	72.66
Department of Agriculture	847,605	559,080	288,525	34.04
Department of Commerce	334,992	251,789	83,203	24.84
Department of Defense	22,992,789	6,400,769	16,592,020	72.16
Department of Education	111,681	11,535	100,146	89.67
Department of Energy	4,536,682	257,549	4,279,133	94.32
Department of Health and Human Services	4,352,530	1,033,872	3,318,658	76.25
Department of Housing and Urban Development	32,090	18,687	13,403	41.77
Department of the Interior	382,473	274,061	108,412	28.35
Department of Justice	31,376	2,870	28,506	90.85
Department of Labor	19,877	5,676	14,201	71.44
Department of Transportation	347,728	75,570	272,158	78.27
Department of the Treasury	15,583	8,211	7,372	47.31
Agency for International Development	227,268	20,550	206,718	90.96
Environmental Protection Agency	240,709	93,214	147,495	61.28
National Aeronautics and Space Administration	2,661,579	1,134,436	1,527,143	57.38
National Science Foundation	1,061,990	130,756	931,234	87.69
Nuclear Regulatory Commission	207,295	23,358	183,937	88.73
Nathaniel Institute	55,960	55,960	—	—
Minnesota Valley Authority	63,000	43,215	19,785	31.40
Veterans Administration	161,400	158,662	2,738	1.70
Other Agencies	26,930	22,099	4,831	17.94

Source: U. S. National Science Foundation, *Federal Funds for Research and Development Fiscal Years 1983, 1984, and 1985* (Washington, D. C. U. S. Government Printing Office, forthcoming)

Table B.10 Federal Agencies with Research and Development Obligations of \$10 Million or More, FY 1984 Revised Estimate

	Obligations (Thousands of Dollars)			Percent Extramural
	Total	Intramural	Extramural	
Total	44,835,777	12,287,167	32,548,610	72.60
Department of Agriculture	871,942	576,014	295,928	33.94
Department of Commerce	360,021	256,114	103,907	28.86
Department of Defense	27,540,045	7,674,241	19,865,804	72.13
Department of Education	131,420	11,026	120,394	91.61
Department of Energy	4,825,576	302,044	4,523,532	93.74
Department of Health and Human Services	4,864,292	1,143,202	3,721,090	76.50
Department of Housing and Urban Development	28,955	16,612	12,343	42.63
Department of the Interior	421,825	306,935	114,890	27.24
Department of Justice	36,555	2,991	33,564	91.82
Department of Labor	18,220	6,065	12,155	66.71
Department of Transportation	515,929	93,248	422,681	81.93
Department of the Treasury	16,439	8,933	7,506	45.66
Agency for International Development	249,167	13,495	235,672	94.58
Environmental Protection Agency	249,987	97,525	152,462	60.99
National Aeronautics and Space Administration	2,888,900	1,260,595	1,628,305	56.36
National Science Foundation	1,238,480	137,825	1,100,655	88.87
Nuclear Regulatory Commission	190,862	21,899	168,963	88.53
Smithsonian Institution	63,758	63,758	—	—
Tennessee Valley Authority	73,300	52,545	20,755	28.32
Veterans Administration	220,900	219,736	1,164	0.53
Other Agencies	29,204	22,364	6,840	23.42

Source: U. S. National Science Foundation, *Federal Funds for Research and Development, Fiscal Years 1983, 1984, and 1985* (Washington, D.C. U.S. Government Printing Office, forthcoming).

Table B.11 Federal Agencies with Research and Development Obligations of \$10 Million or More, FY 1985 Estimate

	Obligations (Thousands of Dollars)			Percent Extramural
	Total	Intramural	Extramural	
Total	52,253,607	13,387,600	38,866,007	74.38
Department of Agriculture	898,941	582,903	316,038	35.16
Department of Commerce	270,559	222,884	47,675	17.62
Department of Defense	34,142,084	8,672,678	25,469,406	74.60
Department of Education	112,288	10,815	101,473	90.37
Department of Energy	4,962,272	287,442	4,674,830	94.21
Department of Health and Human Services	4,953,972	1,155,822	3,798,150	76.67
Department of Housing and Urban Development	30,947	17,830	13,117	42.39
Department of the Interior	368,989	276,950	92,039	24.94
Department of Justice	22,988	2,743	20,245	88.07
Department of Labor	18,957	6,144	12,813	67.59
Department of Transportation	495,204	111,232	383,972	77.54
Department of the Treasury	28,077	17,771	10,306	36.71
Agency for International Development	366,270	13,156	353,114	96.41
Environmental Protection Agency	280,926	104,818	176,108	62.69
National Aeronautics and Space Administration	3,339,400	1,376,826	1,962,574	58.77
National Science Foundation	1,414,017	159,194	1,254,823	88.74
Nuclear Regulatory Commission	168,415	22,751	145,664	86.49
Nitthsonian Institution	69,321	69,321	—	—
Mississippi Valley Authority	80,700	59,131	21,569	26.73
Veterans Administration	194,500	193,286	1,214	0.62
Other Agencies	34,780	23,903	10,877	31.27

Source: U.S. National Science Foundation, *Federal Funds for Research and Development: Fiscal Years 1983, 1984, and 1985* (Washington, D.C.: U.S. Government Printing Office, forthcoming).

	Required	Agency Awards	Surplus or Deficit
Total	\$35,816,024	\$44,463,074	\$8,647,050
Department of Defense	\$14,932,818 ^a	\$20,140,411	\$5,207,593
Department of Health and Human Services	6,637,316	7,300,737	663,421
Department of Energy	5,237,076 ^b	4,988,870	-248,206
National Aeronautics and Space Administration	4,945,000 ^c	4,945,000 ^c	—
National Science Foundation	1,862,468	5,173,000	3,310,532
Department of Agriculture	577,050	555,376	-21,674
Department of Transportation	544,316	253,420	-290,896
Nuclear Regulatory Commission	367,874	339,226	-28,648
Environmental Protection Agency	294,990	248,003	-46,987
Department of the Interior	216,824	208,026	-8,798
Department of Education	200,292	311,005	110,713
Department of Commerce	—	—	—

^aAfter a deduction of 10 percent for intelligence R&D

^bExcluding defense programs and naval reactor development

^cAppropriated

Sources: Requirements compiled by U.S. Small Business Administration from U. S. National Science Foundation, *Federal Funds for Research and Development Fiscal Years 1983, 1984, and 1985* (Washington, D. C. U. S. Government Printing Office, forthcoming), which is reconcilable with "Special Analysis K. Research and Development" in *The Budget of the United States Government, Fiscal Year 1985* (Washington, D. C.: U.S. Government Printing Office, January 1984) Awards from agency Small Business Innovation Research offices

the twelfth SBIR agency during the course of FY 1984, too late for a solicitation in that year. However, the FY 1984 deficit will be made up in FY 1985.

The numbers of SBIR proposals and awards are given in Table B.15. The FY 1983 solicitations produced 8,799 proposals and 784 Phase I awards, a ratio of 11.2 proposals per award. The number of Phase II awards resulting from these solicitations is expected to be 372, or 47 percent of the number of Phase I awards. The FY 1984 solicitations produced 7,824 proposals and an expected 958 Phase I awards, a ratio of 8.2 proposals per award, less than the ratio of 11.2 for the FY 1983 solicitations, but still equal to the ratio experienced by the prototype NSF program.

The SBIR program has stimulated high quality proposals and research, which have produced excitement within the research and development community. The Small Business Innovation Development Act promises to be not only a landmark in small business legislation, but also a contribution to the technology base of the Nation.

Table B.13 *Small Business Innovation Research Funding, FY 1984 Revised Estimate*

	Required	Agency Awards	Surplus or Deficit	Cumulative Surplus or Deficit
Total	\$119,244,142	\$110,175,866	\$-9,068,276	\$-421,226
Department of Defense	\$53,637,672 ^a	\$44,500,000	\$-9,137,672	\$-3,930,079
Department of Health and Human Services	22,326,540	22,400,000	73,460	736,881
Department of Energy	15,616,278 ^b	16,358,840	742,562	494,356
National Aeronautics and Space Administration	13,200,000 ^c	13,200,000 ^c	—	—
National Science Foundation	6,603,930	6,966,550	362,620	3,673,152
Department of Agriculture	1,775,568	1,683,292	-92,276	-113,950
Department of Transportation	2,536,086	1,676,945	-859,141	-1,150,037
Nuclear Regulatory Commission	1,013,778	1,038,000	24,222	-4,426
Environmental Protection Agency	914,772	852,817	-61,955	-108,942
Department of the Interior	689,340	805,758	116,418	107,620
Department of Education	722,364	693,664	-28,700	82,013
Department of Commerce	207,814	—	-207,814	-207,814

^aAfter a deduction of 10 percent for intelligence R&D.

^bExcluding defense programs and naval reactor development.

^cAppropriated.

Sources: Requirements compiled by U.S. Small Business Administration from U.S. National Science Foundation, *Federal Funds for Research Development: Fiscal Years 1983, 1984, and 1985* (Washington, D.C.: U.S. Government Printing Office, forthcoming), which is reconcilable with "Special Analysis K: Research and Development" in *The Budget of the United States Government, Fiscal Year 1985* (Washington, D.C.: U.S. Government Printing Office, January 1984). Awards from agency Small Business Innovation Research offices.

Table B.14 Small Business Innovation Research Funding, FY 1985 Estimate

	Required	Agency Awards	Surplus or Deficit	Cumulative Surplus or Deficit
Total	\$226,958,145	\$196,096,390	\$ - 30,861,755	\$ - 31,282,981
Department of Defense	\$114,612,325 ^a	\$79,000,000	\$-35,612,325	\$-39,542,404
Department of Health and Human Services	37,981,500	44,000,000	6,018,500	6,755,381
Department of Energy	25,377,100 ^b	24,700,000	- 677,100	- 182,744
National Aeronautics and Space Administration	24,000,000 ^c	24,000,000 ^c	—	—
National Science Foundation	12,548,230	12,250,000	- 298,230	3,374,922
Department of Agriculture	3,160,380	3,200,000	39,620	- 74 330
Department of Transportation	3,839,720	2,800,000	- 1,039,720	- 2,189,757
Nuclear Regulatory Commission	1,456,640	1,337,000	- 119,640	- 124,066
Environmental Protection Agency	1,761,080	1,930,000	168,920	59,978
Department of the Interior	920,390	920,390	—	107,620
Department of Education	1,014,730	1,159,000	144,270	226,283
Department of Commerce	286,050	800,000	513,950	306,136

^aAfter a deduction of 10 percent for intelligence R&D

^bExcluding defense programs and naval reactor development

^cAppropriated.

Sources: Requirements compiled by U.S. Small Business Administration from U. S. National Science Foundation, *Federal Funds for Research and Development: Fiscal Years 1983, 1984, and 1985* (Washington, D.C.: U. S. Government Printing Office, forthcoming), which is reconcilable with "Special Analysis K: Research and Development" in *The Budget of the United States Government, Fiscal Year 1985* (Washington, D.C.: U. S. Government Printing Office, January 1984). Awards from agency Small Business Innovation Research offices.

Table B.15 *Small Business Innovation Research Proposals and Awards, FY 1983 and FY 1984*

	FY 1983 Solicitations			FY 1984 Solicitations			FY 1983 and FY 1984 Proposals Per Phase I Award
	Proposals	Phase I Awards	Phase II Awards ^a	Proposals	Phase I Awards	Phase II Awards	
Department of Defense	2,902	283	120 ^b	3,007	372 ^b	372 ^b	9 0
Department of Health and Human Services	779	139	80 ^b	800	170 ^b	170 ^b	5 1
Department of Energy	1,734	106	51	843	102	102	12 4
National Aeronautics and Space Administration	977	102	58	919	129	129	8 2
National Science Foundation	1,186	102	40 ^b	975	110 ^b	110 ^b	10 2
Department of Agriculture	274	16	7	328	16	16	18 8
Department of Transportation	372	6	3	366	17	17	32 1
Nuclear Regulatory Commission	172	6	3	110	6	6	23 5
Environmental Protection Agency	214	10	5	136	10	10	17 5
Department of the Interior	105	6	2	110	13	13	11 3
Department of Education	84	8	3	230	13	13	15 0
Department of Commerce	—	—	—	—	—	—	NA
Total	8,799	784	372	7,824	958	958	9.5

^aThe Phase II awards resulting from FY 1983 solicitations were made for the most part in FY 1984. In addition, Phase II awards resulting from two preceding programs were made—the Department of Defense with 33 awards in FY 1983, and the National Science Foundation with 33 awards in FY 1983 and awards in FY 1984.

^bPreliminary reports.

Source: Agency SBIR program offices

The Small Business Data Base: An Update

Synopsis

The Small Business Data Base (SBDB) was created to meet the informational needs of researchers and policymakers as they relate to the small business sector. This source of information is unique in that it is constructed to provide longitudinal and establishment data over time.

In response to renewed interest in small business as a source of job creation, high-technology growth, and innovation, it became apparent that this sector warranted further attention. However, data from the regular programs of the major federal statistical agencies were inadequate to meet the analytical needs of policy analysts, Congressional staff, and other interested groups.

The SBDB consists of three basic files. The Master Establishment List (MEL), a mailing list of 8.1 million businesses, represents virtually all firms and establishments in the United States. The second file, the United States Establishment and Enterprise Microdata file (USEEM), provides information on employment, sales, the enterprise-establishment relationship, and other firm characteristics for 1976, 1978, 1980 and 1982. The new U.S. Establishment Longitudinal Microdata (USELM) file, was developed for use in examining patterns of change in establishments and employment. The file has supplied data for analysis of job creation by four-digit SIC code, state, SBA region and census region, and by size of establishment and enterprise. Finally, the Financial Statement (FINSTAT) files provide financial information on enterprises beginning in 1975.

The SBDB is drawn from private commercial sources, primarily from Dun and Bradstreet, and has been used for a wide variety of small business analyses. The basic development of the SBDB is now complete. Progress has been made in identifying and eliminating problem records. Future efforts will focus on improving the quality of the data and increasing user access. The SBDB can be an important tool for those interested in public policy and the effects of changing economic conditions on small business.

Introduction

To meet the information needs of policymakers and economic researchers, the Office of Advocacy of the U.S. Small Business Administration (SBA) has been working for five years to develop the Small Business Data Base (SBDB). It is the only available set of information that can

Table C.1 *Business Microdata Files in the Small Business Data Base*

Data File	Source	Number of Records	Information Available	Year
Master Establishment List (MEL)	Dun and Bradstreet's Market Identifier File (DMI) and Market Data Retrieval (MDR)	8 1 million firms and establishments	Establishment name, address and industry for 3.6 million establishments. Establishment name, address, industry, employment, sales, size of firm, enterprise/establishment relationship for 4 5 million firms and establishments	1981
U S. Enterprise and Establishment Microdata File (USEEM)	Dun's Market Identifier File (DMI)	4.5 million firms and establishments	Includes all the above, and enterprise and establishment linkage, and imputations for missing data	1976 1978 1980 and 1
Financial Statement File (FIN-STAT)	Dun's Financial Profiles	3 4 million statements	Includes all of the above except names and addresses, which are confidential, and key balance sheet and profit and loss statement	1976 date, nual f

detailed industry and specific geographic areas over time. Most important, it permits the accurate documentation and reporting of the role of small business and its contribution to the U.S. economy.

The SBDB places no additional paperwork burden on the small business community and has been used to provide data for several important projects: this year's *Report on the State of Small Business*; analyses of the impact of regulatory policy; a model for the job generation process; the exploration of the effects of high-technology industries on employment; and the evaluation of costs and benefits of proposed legislation. The SBDB was developed primarily from Dun & Bradstreet (D&B) sources.

For most purposes, the file can be considered a "universe file" encompassing virtually all of the employees in the nonfarm sectors of the economy.¹

The Small Business Data Base and Its Components

Master Establishment List

The Master Establishment List (MEL) consists of 8.1 million names and addresses of firms and establishments in the United States. It was created by matching the Dun's Market Identifier (DMI) file with the Market Data Retrieval (MDR) file (a Yellow Pages telephone listing) in 1981. The MDR portion lists 3.5 million businesses with name, address, geographic code, SIC code, telephone number, and industry. The DMI portion includes this information and provides statistics on employment, sales, and age of firm for an additional 4.6 million firms and establishments (Table C.1).

Lists of firms from the MEL can be selected by industry (four-digit SIC), region, state, SMSA, other county groupings, and zip code. For the DMI portion, samples can be obtained by employment and sales class, years of company operation and enterprise/establishment relationship (independent branch, subsidiary, or owner). These lists and samples can be produced on computer tape or pressure-sensitive labels, and/or printed as regular listings for mailing purposes.

¹For a more detailed account of the development and structure of the Small Business Data Base, see *The State of Small Business: A Report of the President* (Washington, D.C.: U.S. Government Printing Office, March 1984), pp. 405-442. See also "Constructing a Business Microdata Base for the Analysis of Small Business Activity," unpublished paper prepared by the Office of Advocacy, U.S. Small Business Administration, November 1984.

for internal purposes, to Advocacy research contractors for selections of sample firms, and for other SBA program purposes. In accordance with recent legislation, the SBA makes its mailing lists available to certain outside users working in cooperation with SBA programs.

The MEL file is particularly adaptable as a sampling basis for surveys. The Office of Advocacy has completed a mail-out survey of business ownership characteristics (sex, legal form of business, ethnicity, and veteran status) and is currently analyzing these survey results. The ownership characteristics survey recently provided mailing label data used in a research study of capital and credit available to women- and minority-owned small businesses. Mailing labels of veteran owners were delivered for use in a Veterans Employment and Training Program study of veteran-owned small businesses. Dun and Bradstreet, the data source for the SBDB, used the survey results for a study of veterans' financial characteristics.

*U.S.
Establishment
and Enterprise
Microdata
(USEEM)*

The USEEM file exists for each of the years 1976, 1978, 1980, and 1982. The total USEEM contains nearly 20 million records (5 million per year). Based on the DMI files, this extract file includes nearly all nonfarm businesses with employees and includes variables such as employment, industry classification, age, and geographic location for each establishment and firm. The file also contains information on the organizational status of the business (independent, branch, subsidiary, or owner).

*USEEM as a
Research Tool*

The USEEM file has provided the basis for research studies sponsored by the Office of Advocacy as well as business size studies conducted by other federal agencies. The Office of Advocacy has analyzed USEEM data for industry studies of establishment birth and death rates, such as plant closings.² Extensive tabulations of establishment and job growth by firm size, industry level, and geographic area (state, SBA region, and Census region) have been provided from the USEEM for internal economic analysis. Specific establishment and job growth data for the manufacturing industry in California were provided for a research study.

²Candee L. Harris, "Plant Closings: The Magnitude of the Problem" (Washington, D.C. Working Paper No. 13, Business Microdata Project, The Brookings Institution), July 1983.

capital for veteran-owned enterprises used a USEEM sample of establishments stratified by firm size in selected SBA regions; a study on high unemployment in the Great Lakes Basin and sources of capital to new businesses used similar sample data. Other samples provided the data for a West Virginia Board of Regents study of career-technical program needs and for research on the disappearance of small firms in food processing and related wholesale industries.

USEEM information is currently being used in a National Science Foundation (NSF) evaluation of the impact of the NSF's Innovation Centers Program on job generation. A stratified sample of establishments was provided to the General Accounting Office for a survey in conjunction with a study by the House Committee on Small Business on changing telephone regulations and their impact on small businesses. Data on job generation for the 50 largest SMSAs were used in a study by the Department of Housing and Urban Development. A Small Business Innovation Research project on job growth in high-tech industries also used SBDB data.

*U.S.
Establishment
Longitudinal
Microdata
(USELM)*

The USELM file was constructed from the cross-sectional USEEM files for use specifically in longitudinal analysis of establishment and job growth patterns. For example, the microdata on business behavior throughout the 1976-1982 period permit the examination of patterns preceding establishment closings or following new establishment openings. The recently developed USELM has provided tabulations for current and future studies of job generation in selected one-, two-, three-, and four-digit SICs, for states, SBA regions and Census regions, by size of enterprise and establishment.³ State job generation tabulations were presented at Advocacy's Sixth Annual Conference on the States and Small Business, in San Diego, California in December 1984.

*Financial
Statement File
(FINSTAT)*

The FINSTAT from D&B, and COMPUSTAT from Standard and Poors provide detailed key financial and balance sheet information annually for about 500,000 firms. The COMPUSTAT includes detailed Securities and

³For a detailed description of the USELM files, see Office of Advocacy, U.S. Small Business Administration, "The Derivation of the U.S. Establishment Longitudinal Microdata (USELM) File: The Weighted Integrated USELM 1976-1982 Sample" (Washington, D.C.: U.S. Small Business Administration, December 1984)

publicly traded companies over a 20-year period. The FINSTAT, in contrast, provides information for about 12 percent of the 4.4 million enterprises in the USELM files.

During the past year, significant progress has been made in identifying problem FINSTAT records. Computer editing and screening techniques now enable the SBA to prepare verified tabulations of key financial and balance sheet variables. Financial data are available at the enterprise level only. The data consist of key balance sheet elements, such as cash on hand, notes payable, net sales, and selected financial ratios such as sales-to-employment and net profit-to-total assets. Where appropriate, COMPUSTAT and FINSTAT data have been merged in order to provide a more comprehensive financial data file.

The FINSTAT file provided by D&B omits names and Dun's identifier numbers. This procedure protects the confidentiality of these highly sensitive financial data. Tabulations of means, medians, and statistics relating to significant ratios can be made available, but microdata on individual firms are not available except under conditions mutually agreed to by D&B and the SBA. Nevertheless, studies have been conducted using aggregated FINSTAT data by employment size and net worth. For example, the Environmental Protection Agency used FINSTAT data to create prototype balance sheets for the pesticides, organic chemicals, and other manufacturing sectors.

*Microdata as a
Tool for Policy
Analysis*

All of the basic files of the SBDB were developed using microdata (individual establishment data), which are inherently flexible because they can be easily summarized on many levels. Most of the material published by various federal statistical agencies is in the form of aggregate tabulations, which usually do not provide detail by size of business. Among those that do publish business size information, different definitions are used based on sales, assets, employment, or different size breaks. As a result, data cannot be easily compared between federal or private sources.

An aggregate data base cannot be used to address many public policy issues relating to small business. By their nature, aggregated data do not allow the tracking of changes in individual units. For example, one set of aggregated data may conclude that small businesses are growing faster than large businesses, while another might show the opposite.

*Sectional Tabulations by Employment Size of Firm, 1976-1980
(Employment in Thousands)*

	Total	Employment Size of Firm			
		0-19	20-99	100-499	500+
1976	75,961	15,597	12,834	10,866	36,664
1980	86,854	16,515	14,213	12,839	43,286
Percent Change 1976-1980	14.3	5.9	10.7	18.2	18.1

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Recent tabulations of SBDB microdata illustrate that such a paradoxical set of circumstances can occur, misrepresenting the significance of small business' real contribution to economic growth. When cross-sectional data—information representing one point in time—are used, the small business share of new jobs may appear to be less than it actually is (Table C.2).

If the data are examined longitudinally, a different picture emerges. Longitudinal data show that small firms contributed a significantly greater proportion of new jobs compared to their cross-sectional numbers in the 1976-1980 period. Because small firms were growing faster than large firms, they moved into higher employment classification ranges by 1980. The dynamic analysis illustrates what was happening, but the cross-sectional data understate significantly the role of small business (Table C.3).

The current USEEM/USELM files complete several years of work consisting of specific phases. The basic goal during these various phases was to examine and edit D&B data files and then to estimate missing or inconsistent elements. Accomplishment of these goals consisted of the tasks summarized below.

Extraction of Records

The first phase involved the extraction of the desired variables from the Dun's file. In all, 20 variables were retained for each establishment. The variables were subjected to extensive consistency checking and imputation procedures (Table C.4). Each establishment was then examined to determine whether it was a branch or subsidiary of a larger enterprise. Each multi-establishment

TABLE C.3 Employment by Size of Firm, 1976-1980 (Employment in Thousands)

	Total	Employment Size of Firm			
		0-19	20-99	100-499	500 +
1976	75,961	15,597	12,834	10,866	36,664
1980	86,854	18,772	14,295	12,017	41,770
Percent Change 1976-1980	14.3	20.4	11.4	10.6	13.9

Source: U.S. Small Business Administration, Office of Advocacy, Small Business Data Base, unpublished data.

Table C.4 Data Included in USEEM File

Establishment Description

Identification Number
 Coded State Location of Establishment
 County Location of Establishment
 Primary Standard Industrial Classification
 Secondary Standard Industrial Classification
 Business Age in Years
 Age of Report
 Record Status Code

Enterprise Information

Complex Organization Code
 Firm Employment Size Class
 Firm Industry Division

Economic Data

Annual Gross Sales Volume
 Employment for Establishments

Availability Codes

Sales Availability Code
 Establishment Employment Availability Code

Enterprise Information

Identification Number
 Enterprise Employment
 Count of Subsidiaries
 Count of Branches

cause these multi-establishment records have proven to be internally inconsistent in many cases, a detailed set of *ad hoc* rules was devised to correct conflicting indicators.⁴

Approximately 2 percent of the establishments are missing some employment data. Employment for these establishments was estimated by using median values from *County Business Patterns* data. For the 1978 and 1980 USEEM files, sales estimates were also made for 800,000 establishments. Completion of sales imputation for the 1976 and 1982 files is scheduled for 1985.

Sorting Establishments Into Families

All establishments that are part of multi-establishment enterprises (in contrast to single-establishment enterprises) are then sorted by a series of descriptions of corporate family relationship codes: the Ultimate Dun's, Parent Dun's number, Complex Code (ultimate owner, subsidiary, or branch establishment), and Headquarter Dun's. This sorting procedure combines all establishments with the same Ultimate Dun's number, i.e., all establishments within the same firm.

Creation of Ultimate Owners

Two or more establishments with the same missing owners (Ultimate Dun's numbers do not exist) are corrected by imputing an ultimate owner if the Ultimate Dun's cannot be found elsewhere in the DMI files. An imputed ultimate owner can exist for any of the 72 two-digit SIC groups.

Correction of Intra-Enterprise Structures

Many internal structural problems must also be resolved. Each headquarter company requires branches to report to it: each subsidiary must be linked to a parent; and these subsidiaries must be linked to the ultimate owner. If the total firm employment is larger than the sum of establishment employment, it is likely that a branch or branches are missing from the file. Headquarters without branches have their headquarter designation removed. Likewise, ultimate owners that own nothing are reduced to single establishments. The result of these internal enterprise/establishment structure checks and modifications is a consistent enterprise/establishment file. The

⁴Marjorie Odle and Catherine Armington, "Weighting the 1976-1980 USEEM Files for Dynamic Analysis of Employment Growth" (Washington, D.C.: The Brookings Institution, Business Microdata Project, April 1983), Prepared for the Office of Advocacy, U.S. Small Business Administration, under award no. 2641-OA-79.

more than 1,200 establishments

**Employment
Adjustments**

For headquarter companies, employment figures in both company and headquarter establishments are reported. If the sum of employment in branches is substantially less than the reported employment in headquarters, branches are imputed to the enterprise to account for the missing employment. On the other hand, if the sum of the employment in the branches is larger than the total employment reported by the headquarters, the actual (larger) sum is simply substituted for the reported headquarters total.

**Estimation of
Branch Size
Employment for
Imputed Branches**

The difference between the sum of branch employment and the total employment reported by headquarter companies led to the imputation of a single branch. The estimate of the employment size distribution of branch employment by industry was developed as a function of firm size by industry classification.

**Firm Size and
Firm Industry
Division Codes**

After reconciling employment figures within the establishment/enterprise file ("tree" file), firm size and industry division codes for the enterprises were added. After using these files for economic research, it became apparent that other key variables relating establishments to enterprises also would be useful. These variables included the number of subsidiaries, the number of branches, and the total employment of each enterprise; these variables were subsequently added to each USEEM file record.

USELM

The USELM file is a combination and extraction of the four existing USEEM files (1976, 1978, 1980, and 1982) and contains only those records considered legitimate for time-series analysis.⁵ Although the USEEM files for each set of years for 1978 and 1980, 1976 and 1980, and 1980 and 1982 have been previously linked for longitudinal studies, the results were unsatisfactory. There were basic differences in each of the original DMI files, and detailed comparisons between the different years of DMI data provided significant evidence that this linking of the various years of USEEM files for longitudinal analysis had serious shortcomings. To resolve some of the differences, a new file was created for the SBDB.

⁵Files for 1984 will be available in mid-1985

Industry Division	Average Number of Establishments	Employment			
		1976	1978	1980	1982
All Industries	261	898,153	940,791	1,232,988	2,498,869
Agriculture	1	2,055	2,055	2	2
Mining	13	48,690	43,617	40,880	24,062
Construction	12	47,108	10,413	4,693	12,274
Manufacturing	74	242,020	271,082	459,370	432,359
Transportation, Communications & Public Utilities	23	160,336	128,981	144,284	32,684
Wholesale Trade	13	17,425	28,843	27,966	22,138
Retail Trade	26	73,691	152,649	119,461	146,343
Finance, Insurance & Real Estate	26	71,751	65,249	107,879	110,472
Services ¹	73	235,077	237,902	328,453	1,718,535

¹In addition, 61,986 establishments with 1,535,355 employees were deleted due to inadequate 1982 new coverage of elementary and secondary schools

Source. Catherine Armington and Marjorie Odle, "U.S. Establishment Longitudinal Microdata (USELM) The Weighted Integrated USEEM 1976-1982 Sample" (Washington, D.C.: The Brookings Institution, June 1984)

To make the processing of establishment information easier, valid growth records were collected into a separate USELM extract file. The records in this extract file contain only a few of the variables found in the USEEM records, plus a sample weight and a few special enterprise level variables selected from the Multi-Establishment Enterprise files (tree files). The USELM does not contain Dun's identification numbers, which are present in the USEEM files.

By creating the USELM, several problems were resolved. Major clerical errors in the data files (which were detected when several years of data were linked together) were edited or the records omitted in order to prevent the distortion of aggregate employment levels and employment change (Table C.5).

Various types of reporting problems render more than half the records in the USEEM inadequate for measuring changes in employment. The most common problem is a failure to update records between file years. Also, a number of coverage problems exist. Certain categories of establishments were excluded in some of the DMI files and were included in other files, e.g., educational institutions and banks had extended coverage by D&B after

coverage as increased job growth; therefore, they were excluded from the USELM

Employment in foreign affiliates of U.S. establishments was included in the DMI files and excluded from the USELM files for the same reason. The basic approach taken was to use that subset of USEEM establishment records that had adequate time series data as being representative of all business. Each valid record was weighted to represent some portion of the entire USEEM universe of establishment and employment (Tables C.6 and C.7). The distribution of reporting problems is biased by categories, size of establishment, organizational type, industry, and the period during which the business existed. The USEEM population was divided into 3,840 sampling cells based on (1) 16 control classes reflecting the years of reporting, employment size, and relational status (simple, top, or branch); (2) ten appearance classes; and (3) 24 industry classes resulting in 3840 cells.

After linking and tabulating the four edited USEEM files, weights were calculated for each of the 3840 sampling cells by dividing the universe employment by the USELM sample employment. An independent weight was calculated for each of the multi-year appearance classes (reporting categories) over the four USEEM files.

Conclusion

The SBDB work is entering a new phase. The basic development effort has been completed. The task now is to focus on data quality and user access. In order to examine the ongoing validity of many of the assumptions and decisions made in creating the existing USEEM/USELM files, the firm and establishment data of these files will be matched with selected state unemployment insurance (UI) data for corresponding periods. This major project will compare the results of the UI and USEEM/USELM data for two large states in order to derive evaluative criteria for future USELM enhancements and modifications.

Other planned projects include improvement of the procedure for matching Dun's Market Identifier file with the Market Data Retrieval File in creating the Master Establishment List. Over the years, a number of U.S. and Canadian statistical agencies have implemented matching algorithms on large scale computer systems. A project to test and evaluate these various matching algorithms will assure the relative reliability and economy of the SBA's own matching procedure.

Table C.6 *Size of Employment Reporting Problems in the 1976 Establishment Counts*

Industry Division	Covered Population	Proxv Branches	Hvper Change	New Coverage	Non-Updated	Estimated Employment	USELM Sample
All Industries	4,867,143	379,129	884	695,646	1,516,688	89,866	2,184,930
Agriculture	124,854	4,484	7	37,355	48,811	1,155	33,042
Mining	40,194	5,467	19	5,017	8,547	1,088	20,056
Construction	610,908	14,988	30	94,044	218,061	7,794	275,991
Manufacturing	471,450	39,136	245	36,927	90,206	16,498	288,438
Transportation, Communications & Public Utilities	208,128	24,541	63	26,073	61,434	5,664	90,353
Wholesale Trade	515,330	36,124	35	46,546	107,656	16,275	308,694
Retail Trade	1,522,864	124,956	69	116,978	477,717	21,141	782,003
Finance, Insurance & Real Estate	378,008	58,544	80	102,253	127,128	6,014	83,989
Services	995,407	70,889	336	230,453	377,128	14,237	302,364

Source: Catherine Armington and Marjorie Odle, "U.S. Establishment Longitudinal Microdata (USELM): The Weighted Integrated USELM 1976-1994 Sample" (Washington, D.C.: The Brookings Institution, June 1984).

Table C.7 Size of Employment Reporting Problems in the 1976 Employment Totals

Industry Division	Covered Population	Proxy Branches	Hyper Change	New Coverage	Non-Updated	Estimated Employment	USELN Sample
All Industries	82,313,660	17,104,463	1,342,296	5,459,853	11,063,685	4,421,392	42,921,511
Agriculture	876,106	83,942	7,520	150,903	219,825	28,621	385,231
Mining	1,164,266	371,025	19,927	45,527	109,936	52,111	565,711
Construction	4,649,962	446,008	23,848	371,411	795,074	207,024	2,806,511
Manufacturing	25,953,643	5,793,418	533,616	471,723	1,871,242	1,755,860	15,527,711
Transportation, Communications & Public Utilities	5,389,571	1,683,180	78,506	217,411	692,277	235,074	2,483,111
Wholesale Trade	5,120,027	433,816	59,702	228,136	559,176	352,840	3,486,311
Retail Trade	14,298,709	3,474,381	70,982	635,000	2,798,686	379,539	6,940,111
Finance, Insurance & Real Estate	5,814,584	1,598,368	73,402	879,825	784,284	399,573	2,079,111
Services	19,046,792	3,220,325	474,793	2,459,917	3,233,185	1,010,750	8,647,811

Source: Catherine Armington and Marjorie Odle, "U.S. Establishment Longitudinal Microdata (USELM): The Weighted Integrated USEEM 1976-1 Sample" (Washington, D.C. The Brookings Institution, June 1984).

small business policy issues and general economic research. The basic data for the SBDB are proprietary and are available only for SBA internal use. Currently, a major project is the development of a User Access Protocol which will specify the conditions for outside use of the SBDB. The SBDB files are now being modified so that they can be used in other types of economic research. A careful line must be drawn to preserve copyright and other corporate interests of the providers of the SBDB data and yet allow those with legitimate economic research interests access to this data. The SBA is committed to maintaining the confidentiality of the businesses whose data are the basis of the SBDB.

Finally, in addition to validating the current USEEM/USELM methodology, a major ongoing SBDB project is the in-depth analysis of the large variety of reported results recently made available to Advocacy staff. A thorough understanding of the components, causes, and impact of each of these existing tabulations will provide the basis for even more valuable documentation and research using the SBDB in the future.

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